



STATE OF NEVADA OFFICE OF THE MILITARY

Office of the Adjutant General
2460 Fairview Drive
Carson City, Nevada 89701



JIM GIBBONS
Governor

WILLIAM R. BURKS
Brigadier General
The Adjutant General

Nevada State Clearinghouse
Budget and Planning Division
209 East Musser Street, Room 200
Carson City, NV 89701

RECEIVED
MAY 03 2010

DEPARTMENT OF ADMINISTRATION
OFFICE OF THE DIRECTOR
BUDGET AND PLANNING DIVISION

APR 30 2010

RECEIVED
MAY 01 2010

DEPARTMENT OF ADMINISTRATION
OFFICE OF THE DIRECTOR
BUDGET AND PLANNING DIVISION

Dear Sir/Madam

The Nevada Army National Guard is pleased to announce the availability of the Draft Environmental Assessment (EA) addressing the proposed construction and operation of a new Readiness Center and associated infrastructure at the Floyd Edsall Training Center in the City of North Las Vegas, Clark County, Nevada. The EA is being prepared in accordance with Council on Environmental Quality regulations to comply with the National Environmental Policy Act of 1969.

In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your assistance in reviewing the enclosed EA and providing comments. We also request your assistance in advising appropriate agencies of this Proposed Action and soliciting their comments concerning potential environmental impacts. Agencies and individuals listed in Section 9 of the EA have already received this package; if there are additional agencies you feel should review and comment on the proposal, please include them in your distribution of these materials.

Please review this information and respond with comments within 30 days to our consultant, AMEC Earth & Environmental (AMEC). The point of contact at AMEC is Mr. Doug McFarling. Please forward written comments to Mr. McFarling at 104 West Anapamu Street, Suite 204A, Santa Barbara, CA 93101, or doug.mcfarling@amec.com. Thank you for your assistance.

Sincerely

[Handwritten signature of CPT Daniel Thielen]

CPT Daniel Thielen
Construction and Facilities Management Officer

Enclosures:
Draft EA

DRAFT

**ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED READINESS CENTER AT
THE FLOYD EDSALL TRAINING CENTER,
FOR THE
NEVADA ARMY NATIONAL GUARD
CITY OF NORTH LAS VEGAS, NEVADA**



May 2010

ACRONYMS

| | | | |
|---------|--|-------------------|---|
| AASHTO | American Association of State Highway and Transportation Officials | MV | military vehicle |
| ACHP | Advisory Council on Historic Preservation | MW | megawatt(s) |
| ADT | average daily traffic | NAAQS | National Ambient Air Quality Standards |
| AEI | Air Emissions Inventory | NAGPRA | Native American Graves Protection and Repatriation Act |
| AFB | Air Force Base | NBMG | Nevada Bureau of Mines and Geology |
| AIRFA | American Indian Religious Freedom Act | NDEP | Nevada Department of Environmental Protection |
| AT/FP | Anti-Terrorism/Force Protection | NDF | Nevada Division of Forestry |
| BAQP | Bureau of Air Quality Planning | NDOT | Nevada Department of Transportation |
| bgs | below ground surface | NDOW | Nevada Department of Wildlife |
| BLM | U.S. Bureau of Land Management | NDWR | State of Nevada Division of Water Resources |
| BMP | Best Management Practice(s) | NEPA | National Environmental Policy Act |
| BO | Biological Opinion | NFA | No Further Action |
| CAA | Clean Air Act | NGB | National Guard Bureau |
| CC | Community Commercial (land use classification) | NHPA | National Historic Preservation Act |
| CC- | Clark County Route | NLVPD | North Las Vegas Police Department |
| CCFD | Clark County Fire Department | NNHP | Nevada Natural Heritage Program |
| CCSD | Clark County School District | NO ₂ | Nitrogen Dioxide |
| CCWRD | Clark County Water Reclamation District | NO _x | Oxides of Nitrogen |
| CEQ | Council on Environmental Quality | NPDES | National Pollutant Discharge Elimination System |
| CFR | Code of Federal Regulations | NRHP | National Register of Historic Places |
| CO | carbon monoxide | NRS | Nevada Revised Statute |
| CWA | Clean Water Act | NVARNG | Nevada Army National Guard |
| DAQEM | Department of Air Quality and Environmental Management | O ₃ | ozone |
| dB | decibel(s) | Pb | Lead |
| dBA | a-weighted decibel(s) | PM ₁₀ | inhalable and fine particulate matter less than 10µm in diameter |
| DD | Decision Document | PM _{2.5} | inhalable and fine particulate matter less than 2.5µm in diameter |
| DMV | Department of Motor Vehicles | POV | private operated vehicle |
| DNL | day-night average sound level | POW | Prisoner of War |
| DoD | U.S. Department of Defense | PPA | Power Purchase Agreement |
| E | Employment (land use classification) | PSP | Public/Semi-Public (land use classification) |
| eMS | Environmental Management System | RC | Resort Commercial (land use classification) |
| EO | Executive Order | ROW | right-of-way |
| ERP | Environmental Restoration Program | RTI | Regional Training Institute |
| ESA | Endangered Species Act | SHPO | State Historic Preservation Office |
| EVOC | Emergency Vehicle Operations Course | SIP | State Implementation Plan |
| FEMA | Federal Emergency Management Agency | SNWA | Southern Nevada Water Authority |
| FETC | Floyd Edsall Training Center | SO ₂ | sulfur dioxide |
| FNSI | Finding of No Significant Impact | SPCCP | Spill Prevention, Control, and Countermeasures Plan |
| GEDO | Gaming Enterprise District Overlay (land use classification) | SPVS | solar photovoltaic system |
| GIS | Geographic Information Systems | sf | square foot/feet |
| HI | Heavy Industrial (land use classification) | sq mi | square mile(s) |
| HUD | U.S. Department of Housing and Urban Development | SR- | Nevada State Route |
| I- | Interstate | SWPPP | Storm Water Pollution Prevention Plan |
| JLUS | joint land use study | TCE | trichlorethene |
| kV | kilovolt | TCPC | Tank Crew Proficiency Course |
| LEED | Leadership in Energy and Environmental Design | TMDL | Total Maximum Daily Load |
| LOS | level-of-service | UPRR | Union Pacific Railroad |
| LUST | leaky underground storage tank | US- | U.S. Federal Highway |
| LVVGWMP | Las Vegas Valley Groundwater Management Program | US Army | U.S. Department of the Army |
| MBTA | Migratory Bird Treaty Act | USACE | U.S. Army Corps of Engineers |
| MFR | Multi-Family Residential (land use classification) | USAF | U.S. Air Force |
| MOUT | Military Operations on Urban Terrain | USC | U.S. Code |
| msl | mean sea level | USDA | U.S. Department of Agriculture |
| MUC | Mixed-Use Commercial (land use classification) | USFWS | U.S. Fish and Wildlife Service |
| MUN | Mixed-Use Neighborhood (land use classification) | USGS | U.S. Geological Survey |
| | | UTES | Unit Training Equipment Site |

PROPOSED READINESS CENTER

**At the Floyd Edsall Training Center
North Las Vegas, Nevada
Environmental Assessment**

Signature Page

Reviewed By: _____ Date: _____

Cynthia N. Kirkland
MG, NVMD
The Adjutant General

_____ Date: _____

Clayton Chappell
LTC, NVMD
Construction and Facilities Management Officer

_____ Date: _____

Forrest Fox
Environmental Program Manager
Nevada Army National Guard

1

EXECUTIVE SUMMARY

2 In order to enhance readiness levels and ensure that assigned units and equipment are
3 prepared for mobilization, the Nevada Army National Guard (NVARNG) has proposed
4 the construction of a new Readiness Center and associated infrastructure at the Floyd
5 Edsall Training Center (FETC) in the City of North Las Vegas, Clark County, Nevada.

6 The Proposed Action includes three distinct components:

- 7 1) The construction of a 68,593-square foot (sf) Readiness Center housing
8 administrative offices, classrooms, lockers, latrines, kitchen space, storage
9 areas, and workbays, including a 10,000-sf unheated metal storage building, a
10 300-sf controlled waste facility, and a 250-sf guard shack/entry control point;
- 11 2) Infrastructure and other systems upgrades associated with the proposed
12 facilities including 2,128 feet of new fencing, 36,000 sf of sidewalk space,
13 99,225 sf of space for privately owned vehicle parking, and 74,475 sf of space
14 for military vehicle parking; and
- 15 3) Generation/purchase of renewable energy to support the needs of existing
16 FETC facilities and new facilities associated with the Proposed Action.

17 The Proposed Action would be implemented only after applicable regulatory agencies
18 have been consulted and required permits have been obtained (refer to Section 9);
19 consultation and permitting through these agencies may result in changes to the
20 mitigation measures proposed in this document.

21 NVARNG assessed the following alternatives to identify which would best implement
22 the Proposed Action:

23 **Preferred Alternative**

24 The Preferred Alternative would involve construction of the proposed Readiness Center
25 and associated infrastructure for the NVARNG, as well as construction of an
26 approximately 300-acre Solar Photovoltaic System (SPVS), on the approximately 1,700-
27 acre FETC and associated training areas located on land controlled by the NVARNG.
28 The proposed facilities would house all elements of the 240th Quartermaster Water
29 Company (a total strength of 188 reserve soldiers) and the 240th Engineering Company
30 (a total strength of 162 reserve soldiers). A three-way Power Purchase Agreement (PPA)
31 between NV Energy, NVARNG, and a private utility developer would facilitate the

1 construction and operation of the SPVS. In addition, the SPVS would provide existing
2 FETC facilities and the proposed Readiness Center with a renewable energy source to
3 augment the existing power supply, which relies heavily on fossil fuels.

4 **No Solar Component Alternative**

5 The No Solar Component Alternative would also be located within the FETC and
6 associated training areas. Under this alternative, construction of the Readiness Center
7 and associated infrastructure improvements would remain as previously described under
8 the Preferred Alternative, but installation of the SPVS would not be included as part of
9 the project. In order to comply with Executive Order 13423 and the NGB-mandated eMS
10 on renewable energy use, the NVARNG would purchase renewable energy at retail rates
11 from an off-site supplier but would not establish new alternative energy infrastructure
12 that would contribute renewable energy supply to the grid. As a result, the NVARNG
13 would not contribute to the generation of or facilitate purchase of renewable energy in
14 accordance with the proposed PPA under the Preferred Alternative.

15 **No Action Alternative**

16 An environmental analysis of a No-Action Alternative is required by NEPA and CEQ
17 regulations to serve as a benchmark against which the Proposed Action can be evaluated.
18 Under the No-Action Alternative, the Readiness Center and associated infrastructure
19 would not be constructed, and NVARNG activities would continue to be housed in
20 inadequate facilities which do not meet the security or operational requirements of the
21 current mission. This alternative would allow current operations to continue; however,
22 the lack of adequate facilities and the location of existing facilities would continue to
23 hinder the affected units' ability to meet required mobilization readiness levels. In
24 addition, the NVARNG would not purchase renewable energy for existing facilities at
25 FETC and the proposed Readiness Center and would continue to rely heavily on
26 electricity produced through the consumption of fossil fuels (e.g., coal).

27 Based on the analysis in this EA, the Proposed Action does not have the potential to
28 degrade the quality of the environment, to substantially reduce the habitat of a fish or
29 wildlife species, to cause a fish or wildlife population to drop below self-sustaining
30 levels, to threaten to eliminate a plant or animal community, to reduce the number or
31 restrict the range of a rare or endangered plant or animal, or to eliminate important
32 examples of the major periods of Nevada history or prehistory. In addition,

- 1 implementation of the Proposed Action Alternative would not have environmental effects
- 2 that would have substantial direct or indirect adverse effects on humans.

CONTENTS

| <u>SECTION</u> | <u>PAGE</u> |
|--|--------------------|
| LIST OF ACRONYMS AND ABBREVIATIONS | inside front cover |
| DRAFT FINDING OF NO SIGNIFICANT IMPACT | 1 |
| EXECUTIVE SUMMARY | ES-1 |
| SECTION 1 PURPOSE AND NEED FOR THE PROPOSED ACTION | 1-1 |
| 1.1 Introduction..... | 1-1 |
| 1.2 Purpose and Need | 1-1 |
| 1.3 Summary of Environmental Study Requirements | 1-4 |
| 1.3.1 National Environmental Policy Act | 1-4 |
| 1.3.2 Endangered Species Act..... | 1-5 |
| 1.3.3 Clean Air Act and Conformity Requirements | 1-5 |
| 1.3.4 Water Resources Regulatory Requirements..... | 1-6 |
| 1.3.5 Cultural Resources Regulatory Requirements | 1-6 |
| 1.3.6 Sustainability and Greening | 1-7 |
| 1.3.7 Other Executive Orders | 1-8 |
| 1.3.8 Interagency and Intergovernmental Coordination for Environmental Planning | 1-9 |
| 1.4 Scope and Organization of the Document | 1-9 |
| 1.5 Public Involvement | 1-10 |
| SECTION 2 DESCRIPTION OF THE PROPOSED ACTION | 2-1 |
| 2.1 Introduction..... | 2-1 |
| 2.2 Proposed Action..... | 2-1 |
| 2.3 Project Components | 2-2 |
| 2.3.1 Readiness Center | 2-2 |
| 2.3.2 Infrastructure | 2-4 |
| 2.3.3 Purchase of Renewable Energy | 2-4 |
| 2.3.4 Construction Activities..... | 2-4 |
| SECTION 3 ALTERNATIVES CONSIDERED | 3-1 |
| 3.1 Alternatives Development | 3-1 |
| 3.2 Alternatives Evaluated..... | 3-3 |
| 3.2.1 Preferred Alternative | 3-3 |
| 3.2.2 No Solar Component Alternative..... | 3-5 |
| 3.2.3 No-Action Alternative..... | 3-6 |
| SECTION 4 AFFECTED ENVIRONMENT | 4-1 |
| 4.1 Land Use and Visual Resources | 4-1 |
| 4.1.1 Land Use at FETC..... | 4-1 |
| 4.1.2 Surrounding Land Use..... | 4-5 |
| 4.1.3 Visual Resources | 4-8 |

CONTENTS
(continued)

| <u>SECTION</u> | <u>PAGE</u> |
|--|-------------|
| 4.2 Air Quality | 4-9 |
| 4.2.1 Air Quality Conditions | 4-9 |
| 4.2.2 Clean Air Act Amendments | 4-11 |
| 4.2.3 Regional Setting | 4-11 |
| 4.2.4 Local Setting | 4-11 |
| 4.2.5 Sensitive Receptors | 4-12 |
| 4.3 Noise | 4-12 |
| 4.3.1 Noise Guidelines | 4-13 |
| 4.3.2 Noise Conditions | 4-13 |
| 4.4 Geology and Soils | 4-14 |
| 4.4.1 Geologic Setting | 4-14 |
| 4.4.2 Potential Geologic Hazards | 4-18 |
| 4.5 Water Resources | 4-18 |
| 4.5.1 Regulatory Overview | 4-19 |
| 4.5.2 Surface Water | 4-19 |
| 4.5.3 Groundwater | 4-23 |
| 4.5.4 Floodplains | 4-24 |
| 4.5.5 Wetlands | 4-24 |
| 4.6 Biological Resources | 4-25 |
| 4.6.1 Regulatory Overview | 4-25 |
| 4.6.2 Vegetation | 4-26 |
| 4.6.3 Sensitive Habitats | 4-27 |
| 4.6.4 Wildlife | 4-27 |
| 4.6.5 Threatened and Endangered Species | 4-28 |
| 4.6.6 Noxious Weeds | 4-33 |
| 4.7 Cultural Resources | 4-34 |
| 4.7.1 Regulatory Overview | 4-34 |
| 4.7.2 Investigations of the Project Site | 4-34 |
| 4.8 Socioeconomics | 4-35 |
| 4.8.1 Population | 4-35 |
| 4.8.2 Employment | 4-37 |
| 4.8.3 Housing Supply | 4-38 |
| 4.8.4 Schools | 4-39 |
| 4.8.5 Shops and Services | 4-39 |
| 4.8.6 Recreation | 4-39 |
| 4.8.7 Energy Consumption | 4-39 |
| 4.9 Environmental Justice | 4-40 |
| 4.9.1 Minority and Low-Income Populations | 4-40 |
| 4.9.2 Protection of Children from Environmental Health and Safety Risks | 4-42 |
| 4.10 Infrastructure and Safety | 4-43 |
| 4.10.1 Infrastructure | 4-43 |

CONTENTS
(continued)

| <u>SECTION</u> | <u>TITLE</u> | <u>PAGE</u> |
|---|--|-------------|
| 4.10.2 | Safety | 4-45 |
| 4.11 | Traffic and Circulation..... | 4-48 |
| 4.11.1 | Transportation Network | 4-48 |
| 4.11.2 | Operating Conditions | 4-51 |
| 4.12 | Hazardous and Toxic Materials and Waste | 4-51 |
| 4.12.1 | Hazardous Material and Petroleum Product Release Sites | 4-51 |
| 4.13 | Sustainability and Greening..... | 4-54 |
| SECTION 5 ENVIRONMENTAL CONSEQUENCES | | 5-1 |
| 5.1 | Land Use and Visual Resources | 5-2 |
| 5.1.1 | Preferred Alternative | 5-2 |
| 5.1.2 | No Solar Component Alternative | 5-5 |
| 5.1.3 | No-Action Alternative | 5-5 |
| 5.2 | Air Quality | 5-5 |
| 5.2.1 | Preferred Alternative | 5-5 |
| 5.2.2 | No Solar Component Alternative | 5-8 |
| 5.2.3 | No-Action Alternative | 5-9 |
| 5.3 | Noise | 5-9 |
| 5.3.1 | Preferred Alternative | 5-9 |
| 5.3.2 | No Solar Component Alternative | 5-12 |
| 5.3.3 | No-Action Alternative | 5-12 |
| 5.4 | Geology and Soils..... | 5-12 |
| 5.4.1 | Preferred Alternative | 5-13 |
| 5.4.2 | No Solar Component Alternative | 5-15 |
| 5.4.3 | No-Action Alternative | 5-15 |
| 5.5 | Water Resources | 5-15 |
| 5.5.1 | Preferred Alternative | 5-15 |
| 5.5.2 | No Solar Component Alternative | 5-19 |
| 5.5.3 | No-Action Alternative | 5-19 |
| 5.6 | Biological Resources | 5-19 |
| 5.6.1 | Preferred Alternative | 5-20 |
| 5.6.2 | No Solar Component Alternative | 5-24 |
| 5.6.3 | No-Action Alternative | 5-25 |
| 5.7 | Cultural Resources | 5-25 |
| 5.7.1 | Preferred Alternative | 5-25 |
| 5.7.2 | No Solar Component Alternative | 5-26 |
| 5.7.3 | No-Action Alternative | 5-27 |
| 5.8 | Socioeconomics | 5-27 |
| 5.8.1 | Preferred Alternative | 5-27 |
| 5.8.2 | No Solar Component Alternative | 5-29 |
| 5.8.3 | No-Action Alternative | 5-29 |
| 5.9 | Environmental Justice | 5-29 |

CONTENTS
(continued)

| <u>SECTION</u> | <u>PAGE</u> |
|--|-------------|
| 5.9.1 Preferred Alternative | 5-29 |
| 5.9.2 No Solar Component Alternative | 5-30 |
| 5.9.3 No-Action Alternative | 5-31 |
| 5.10 Infrastructure and Safety | 5-31 |
| 5.10.1 Preferred Alternative | 5-31 |
| 5.10.2 Safety | 5-34 |
| 5.10.3 No Solar Component Alternative | 5-35 |
| 5.10.4 No-Action Alternative | 5-35 |
| 5.11 Traffic and Circulation | 5-35 |
| 5.11.1 Preferred Alternative | 5-36 |
| 5.11.2 No Solar Component Alternative | 5-37 |
| 5.11.3 No-Action Alternative | 5-37 |
| 5.12 Hazardous and Toxic Materials and Waste | 5-37 |
| 5.12.1 Preferred Alternative | 5-38 |
| 5.12.2 No Solar Component Alternative | 5-41 |
| 5.12.3 No-Action Alternative | 5-41 |
| 5.13 Sustainability and Greening | 5-41 |
| 5.13.1 Preferred Alternative | 5-42 |
| 5.13.2 No Solar Component Alternative | 5-42 |
| 5.13.3 No-Action Alternative | 5-43 |
| 5.14 Mitigation Measures and Best Management Practices | 5-43 |
| 5.15 Cumulative Impacts | 5-45 |
| SECTION 6 COMPARISON OF ALTERNATIVES AND CONCLUSIONS..... | 6-1 |
| 6.1 Comparison of Environmental Consequences of Alternatives | 6-1 |
| 6.2 Conclusions..... | 6-2 |
| SECTION 7 REFERENCES..... | 7-1 |
| SECTION 8 LIST OF PREPARERS..... | 8-1 |
| SECTION 9 AGENCIES AND INDIVIDUALS CONSULTED | 9-1 |
| 9.1 Federal and State Agencies | 9-1 |
| 9.2 Local Agencies and Individuals | 9-1 |
| 9.3 Federally-Recognized Tribes | 9-1 |

APPENDICES

- A Agency Consultation**
- B Air Quality Calculations**

LIST OF FIGURES

| <u>NUMBER</u> | <u>TITLE</u> | <u>PAGE</u> |
|---------------|---|-------------|
| Figure 1-1. | Regional Location and Project Site Map..... | 1-2 |
| Figure 2-1. | Proposed Readiness Center at FETC..... | 2-3 |
| Figure 3-1. | Proposed Solar Photovoltaic System at FETC | 3-4 |
| Figure 4-1. | Easements and Other Land Use Restrictions at FETC..... | 4-4 |
| Figure 4-2. | Proposed Land Use Designations in the Vicinity of FETC..... | 4-7 |
| Figure 4-3. | Soil Types Present at FETC | 4-16 |
| Figure 4-4. | Watershed and Major Drainages of the Las Vegas Valley | 4-20 |
| Figure 4-5. | Water Resources and Ephemeral Drainages in the Vicinity of FETC | 4-22 |
| Figure 4-6. | Census Tracts in the Vicinity of FETC | 4-36 |
| Figure 4-7. | Security and Anti-Terrorism/Force Protection (AT/FP) Setbacks at Existing Readiness Center and Cantonment Area..... | 4-47 |
| Figure 4-8. | Circulation and Average Daily Traffic Counts (ADTs) in the Vicinity of FETC..... | 4-50 |
| Figure 4-9. | Hazardous Material and Petroleum Product Release Sites in the Vicinity of FETC..... | 4-52 |
| Figure 5-1. | Recommended Land Use Based on Noise Levels..... | 5-10 |
| Figure 5-2. | Ephemeral Drainages in the Vicinity of the Proposed Solar Photovoltaic System at the FETC | 5-17 |
| Figure 5-3. | Hazardous Material and Petroleum Product Release Sites in the Vicinity of the Proposed Solar Photovoltaic System | 5-39 |

LIST OF TABLES

| <u>NUMBER</u> | <u>TITLE</u> | <u>PAGE</u> |
|---------------|--|-------------|
| Table 4-1. | Proposed Land Use by NVARNG, FETC <i>Site Development Master Plan</i> | 4-2 |
| Table 4-2. | Proposed Land Use by External Organizations, FETC <i>Site Development Master Plan</i> | 4-3 |
| Table 4-3. | Current City of North Las Vegas Zoning in the Vicinity of FETC..... | 4-5 |
| Table 4-4. | Proposed Land Use Designations in the Vicinity of FETC..... | 4-6 |
| Table 4-5. | National and Nevada Ambient Air Quality Standards | 4-10 |
| Table 4-6. | Clark County Emissions for Criteria Pollutants (tons per year)..... | 4-12 |
| Table 4-7. | Plant Species Observed within the Proposed Project Sites | 4-27 |
| Table 4-8. | Federally- and State-Listed Sensitive Species Potentially Occurring in Clark County, Nevada | 4-29 |
| Table 4-9. | Major Employers in North Las Vegas and Clark County, Nevada | 4-37 |
| Table 4-10. | Workforce and Unemployment in Census Tracts Surrounding FETC..... | 4-38 |
| Table 4-11. | Housing Characteristics for Census Tracts Surrounding FETC (2000) | 4-38 |
| Table 4-12. | City of North Las Vegas Housing Characteristics | 4-38 |
| Table 4-13. | Population Percentages by Race (2000) | 4-41 |

LIST OF TABLES
(continued)

| <u>SECTION</u> | <u>PAGE</u> |
|--|--------------------|
| Table 4-14. Per Capita Income at Local, City, County, State, and National Levels | 4-41 |
| Table 4-15. Age Distribution Information (2000) | 4-42 |
| Table 4-16. Age Distribution Information (2006 Estimates)..... | 4-43 |
| Table 5-1. Emissions of Criteria Pollutants from Construction of Readiness Center and SPVS (tons per year)..... | 5-6 |
| Table 5-2. Emissions of Criteria Pollutants from Operation of Readiness Center (tons per year)..... | 5-8 |
| Table 5-3. Typical Commercial Construction Noise Levels | 5-11 |
| Table 6-1. Summary of Environmental Impacts..... | 6-1 |

1 **SECTION 1**

2 **PURPOSE AND NEED FOR THE PROPOSED ACTION**

3 **1.1 INTRODUCTION**

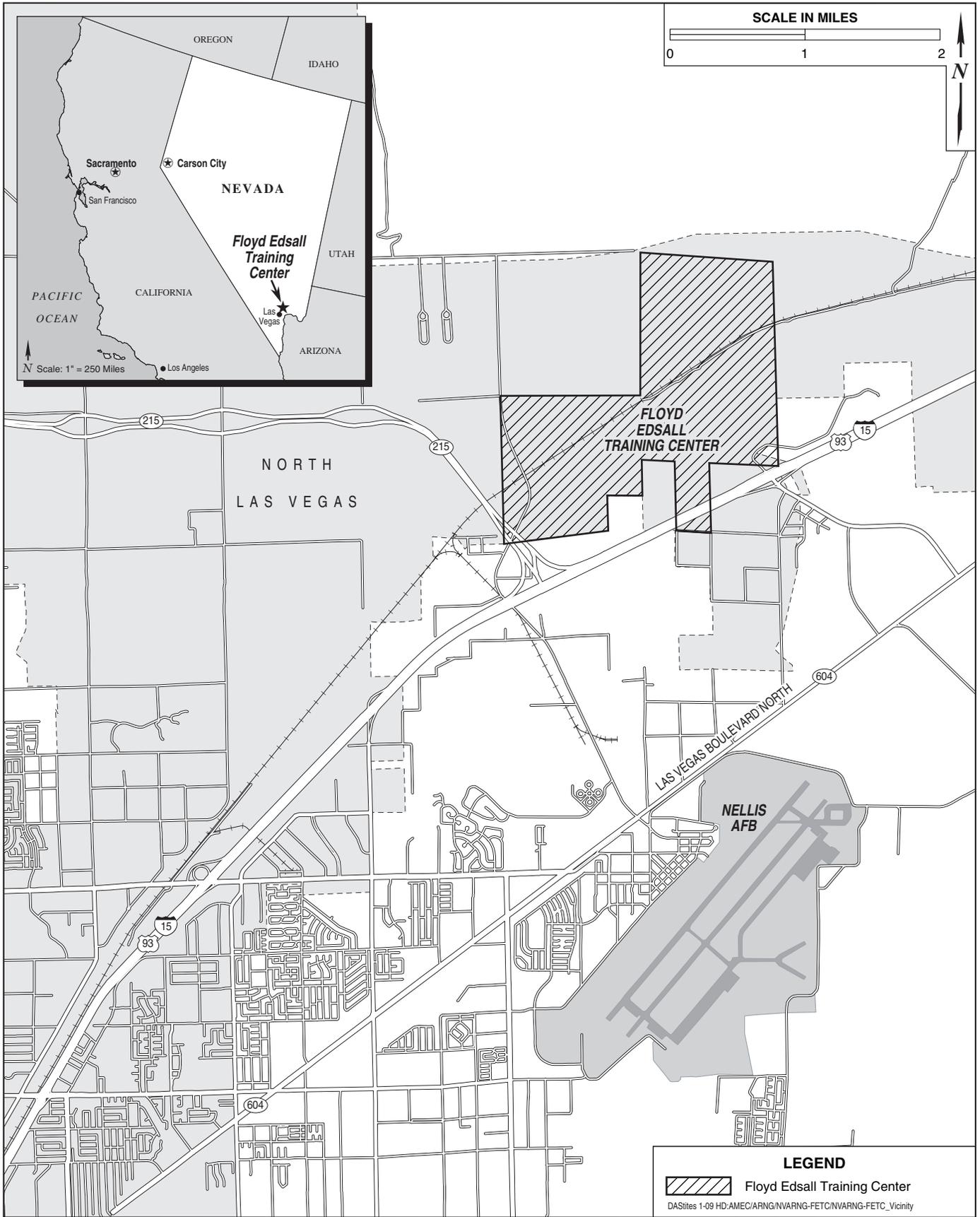
4 The Nevada Army National Guard (NVARNG) has prepared this Environmental
5 Assessment (EA) to address potential environmental impacts associated with construction
6 and operation of the proposed North Las Vegas Readiness Center, purchase of renewable
7 energy, and establishment of associated infrastructure, located at the existing Floyd
8 Edsall Training Center (FETC) adjacent to the existing cantonment area in the City of
9 North Las Vegas, Clark County, Nevada (Figure 1-1).

10 The NVARNG has prepared this EA pursuant to: the National Environmental Policy Act
11 (NEPA) of 1969, 42 U.S. Code (USC) § 4321 et seq.; Council on Environmental Quality
12 (CEQ) regulations for implementing NEPA, 40 Code of Federal Regulations (CFR) Parts
13 1500-1508; *Environmental Analysis of Army Actions* (32 CFR 651); and the National
14 Guard Bureau (NGB) *NEPA Handbook* (2006).

15 The NEPA Lead Federal Agency is the NGB. As Lead Federal Agency on projects for
16 which the NVARNG is the proponent, the NGB is ultimately responsible for analysis and
17 documentation of environmental impacts potentially occurring as a result of project
18 implementation; however, the local responsibility for NEPA document preparation falls
19 upon the NVARNG. As the executive agent of the Department of Defense (DoD) for all
20 matters pertaining to the Army National Guard (ARNG), the NGB is responsible for
21 reviewing ARNG NEPA documents. The NGB reviews the draft and final EAs before
22 they are made available for public review and signs the Finding of No Significant Impact
23 (FNSI) at the conclusion of the NEPA process if adverse effects are not anticipated or are
24 mitigated to less than significant levels. If anticipated environmental effects cannot be
25 mitigated to less than significant levels, NVARNG would publish a Notice of Intent
26 (NOI) to prepare an Environmental Impact Statement (EIS).

27 **1.2 PURPOSE AND NEED**

28 The NVARNG has three missions - Federal, state and community. The Federal mission
29 is to provide units trained and ready to respond to Federal mobilizations as directed by
30 Congress or the President. The state mission is to provide a regulated militia for the State
31 of Nevada in support of the State Constitution, and to protect the lives and property of the
32 public, both citizens and visitors, in times of emergency, disorder or disaster.



EA

**Vicinity Map
Floyd Edsall Training Center
Nevada Army National Guard, North Las Vegas, Nevada**

**FIGURE
1-1**



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

1 The community mission is to add value to Nevada communities through local Guard
2 activities, programs, and events. As such, it is critically important that the NVARNG
3 maintain a system of training facilities capable of ensuring its soldiers are well prepared
4 to fulfill its Federal, state, and community missions.

5 The FETC is located on approximately 1,670 acres and currently maintains 200,000
6 square feet (sf) of facilities on site. The training center plays a crucial role in preparing
7 soldiers for the challenges of modern warfare, as well as building leadership and combat
8 service support capabilities. Currently, FETC contains the existing Clark County
9 Readiness Center, constructed in 1997, as well as various other facilities constructed
10 since then. Utilities were brought to the site in 1997 to support the existing Readiness
11 Center. Energy infrastructure does not meet future needs nor capitalize on the
12 availability of any renewable resources.

13 The *purpose* of the Proposed Action is to enhance readiness levels of assigned units and
14 to ensure that the assigned units and equipment are prepared for mobilization. The
15 Proposed Action would also help the NVARNG increase its compliance with recently
16 issued regulations and policies addressing energy use. Implementation of the Proposed
17 Action would provide full-time support to the 100th Quartermaster Water Company
18 (QMC) and 240th Engineer Company (ENC).

19 As currently configured, the existing Readiness Center cannot support the collocation of
20 assigned units, resulting in fragmented command and decentralized training, both of
21 which are detrimental to unit readiness. Construction associated with the Proposed
22 Action would resolve these operational limitations, creating a more efficient and effective
23 “campus” layout and resulting in improved training opportunities. Further, the
24 generation and use of renewable energy sources to support existing and proposed
25 facilities at FETC would allow the Proposed Action to comply with Executive Order
26 13423—*Strengthening Federal Environmental, Energy, and Transportation*
27 *Management*—and the NGB-mandated environmental Management System (eMS)
28 regarding increased renewable energy use, and assist the NVARNG with state-wide
29 compliance.

30 The *need* for the Proposed Action is to provide the NVARNG with training,
31 administrative, and storage facilities necessary to achieve proficiency in required training
32 tasks to support the missions of the assigned units. The proposed facilities would house
33 all elements of the 100th QMC and the 240th ENC. The 240th ENC’s assigned mission

1 is to provide command and control of three to five vertical engineer platoons that provide
2 specific engineering support including the construction of basecamps and internment
3 facilities as well as the construction, repair, and maintenance of other vertical
4 infrastructure in support of the Division and Maneuver Brigade Combat Team. Mission
5 activities associated with the 240th ENC would involve training activities conducted on
6 open space within FETC during drill weekends; including staging, mobilization, and
7 minor vertical construction training activities in order to ensure the unit and equipment
8 are prepared for mobilization. The assigned mission of the 100th QMC is to provide
9 direct support for water purification, storage, and distribution for non-divisional and
10 divisional troops on an area basis. The 100th QMC would also use the proposed facilities
11 for necessary administrative and storage areas. However, while the 100th QMC will
12 conduct some of its training activities at FETC, including mobilization and maintenance
13 training, the majority of primary training activities of the 100th QMC would be
14 accomplished at Lake Mead or other regional water bodies, where a water source would
15 be available for water purification training activities.

16 The existing Readiness Center at FETC lacks adequate training, administrative, and
17 storage space and has limited military vehicle and off-street parking spaces available.
18 Other deficiencies include a lack of paving for military parking and inadequate security
19 fencing and entry control points. While the existing Readiness Center at FETC is in
20 serviceable condition, it is not compliant with current building codes or design criteria;
21 further, it is two-thirds the size authorized to support the units' missions. Additionally,
22 no NVARNG facilities are available to adequately house these units in the local area. All
23 existing facilities in the area have been surveyed and none can be expanded to meet the
24 units' requirements as currently configured.

25 **1.3 SUMMARY OF ENVIRONMENTAL STUDY REQUIREMENTS**

26 The Environmental Impact Analysis Process (EIAP) is the process by which Federal
27 agencies facilitate compliance with environmental regulations. The primary legislation
28 affecting these agencies' decision-making process is the NEPA of 1969. This act and
29 other facets of the EIAP are described below.

30 **1.3.1 National Environmental Policy Act**

31 NEPA requires that Federal agencies consider potential environmental consequences of
32 proposed actions. The law's intent is to protect, restore, or enhance the environment
33 through well-informed Federal decisions. The CEQ was established under NEPA for the

1 purpose of implementing and overseeing Federal policies as they relate to this process.
2 In 1978, the CEQ issued *Regulations for Implementing the Procedural Provisions of the*
3 *National Environmental Policy Act* (40 CFR §1500-1508 [CEQ 1978]). These
4 regulations specify that an EA be prepared to:

- 5 • briefly provide sufficient analysis and evidence for determining whether to
6 prepare an EIS or a Finding of No Significant Impact (FNSI);
- 7 • aid in an agency’s compliance with NEPA when no EIS is necessary; and
- 8 • facilitate preparation of an EIS when one is necessary.

9 Further, to comply with other relevant environmental requirements (e.g., the Safe
10 Drinking Water Act, Endangered Species Act [ESA], and National Historic Preservation
11 Act [NHPA]) in addition to NEPA, and to assess potential environmental impacts, the
12 EIAP and decision-making process for the proposed action involves a thorough
13 examination of all environmental issues pertinent to the action proposed for FETC.

14 To comply with NEPA and other pertinent environmental requirements, and to assess
15 impacts on the environment, the decision-making process includes a study of
16 environmental issues related to the Proposed Action at FETC.

17 **1.3.2 Endangered Species Act**

18 The ESA of 1973 (16 USC §§ 1531–1544, as amended) established measures for the
19 protection of plant and animal species that are federally listed as threatened and
20 endangered, and for the conservation of habitats that are critical to the continued
21 existence of those species. Federal agencies must evaluate the effects of their proposed
22 actions through a set of defined procedures, which can include the preparation of a
23 Biological Assessment and can require formal consultation with the U.S. Fish and
24 Wildlife Service (USFWS) under Section 7 of the Act.

25 **1.3.3 Clean Air Act and Conformity Requirements**

26 The Clean Air Act (CAA) (42 USC §§ 7401–7671, as amended) provided the authority
27 for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air
28 quality standards to protect public health and welfare. Federal standards, known as the
29 National Ambient Air Quality Standards (NAAQS), were developed for six criteria
30 pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide
31 (SO₂), particulate matter, and lead (Pb). The Act also requires that each state prepare a
32 State Implementation Plan (SIP) for maintaining and improving air quality and

1 eliminating violations of the NAAQS. Under the CAA Amendments of 1990, Federal
2 agencies are required to determine whether their undertakings are in conformance with
3 the applicable SIP and demonstrate that their actions will not cause or contribute to a new
4 violation of the NAAQS; increase the frequency or severity of any existing violation; or
5 delay timely attainment of any standard, emission reduction, or milestone contained in
6 the SIP. The USEPA has set forth regulations 40 CFR 51, Subpart W, that require the
7 proponent of a proposed action to perform an analysis to determine if its implementation
8 would conform with the SIP.

9 **1.3.4 Water Resources Regulatory Requirements**

10 The Clean Water Act (CWA) of 1977 (33 USC §§ 1251 *et seq.*) regulates pollutant
11 discharges that could affect aquatic life forms or human health and safety. Section 404 of
12 the CWA, and Executive Order (EO) 11990, *Protection of Wetlands*, regulate
13 development activities in or near streams or wetlands. Section 404 also regulates
14 development in streams and wetlands and requires a permit from the U.S. Army Corps of
15 Engineers (USACE) for dredging and filling in wetlands. EO 11988, *Floodplain*
16 *Management*, requires Federal agencies to take action to reduce the risk of flood damage;
17 minimize the impacts of floods on human safety, health, and welfare; and to restore and
18 preserve the natural and beneficial values served by floodplains. Federal agencies are
19 directed to consider the proximity of their actions to or within floodplains.

20 **1.3.5 Cultural Resources Regulatory Requirements**

21 The NHPA of 1966 (16 USC § 470) established the National Register of Historic Places
22 (NRHP) and the Advisory Council on Historic Preservation (ACHP) that outlined
23 procedures for the management of cultural resources on Federal property. Cultural
24 resources can include archaeological remains, architectural structures, and traditional
25 cultural properties such as ancestral settlements, historic trails, and places where
26 significant historic events occurred. NHPA requires Federal agencies to consider
27 potential impacts to cultural resources that are listed, nominated to, or eligible for listing
28 on the NRHP; designated a National Historic Landmark; or valued by modern Native
29 Americans for maintaining their traditional culture. Section 106 of NHPA requires
30 Federal agencies to consult with the appropriate State Historic Preservation Office
31 (SHPO) if their undertaking might affect such resources. An undertaking refers to a
32 project, activity, or program funded in whole or in part under the direct or indirect
33 jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal
34 agency; those carried out with Federal financial assistance; and those requiring a Federal

1 permit, license or approval. *Protection of Historic and Cultural Properties* (36 CFR 800
2 [1986]) provided an explicit set of procedures for Federal agencies to meet their
3 obligations under the NHPA, which includes inventorying of resources and consultation
4 with SHPO.

5 EO 13007, *Indian Sacred Sites*, directs Federal land (any land or interests in land owned
6 by the United States, including leasehold interests held by the United States, except
7 Indian trust lands) managing agencies to accommodate access to, and ceremonial use of,
8 Indian sacred sites (any specific, discrete, narrowly delineated location on Federal land
9 that is identified by an Indian tribe [an Indian or Alaska Native tribe, band, nation,
10 Pueblo, village, or community that the Secretary of the Interior acknowledges to exist as
11 an Indian tribe pursuant to Public Law No. 103-454, 108 Stat. 4791, an “Indian” refers to
12 a member of such an Indian tribe] or Indian individual determined to be an appropriately
13 authoritative representative of an Indian religion, as sacred by virtue of its established
14 religious significance to, or ceremonial use by, an Indian religion) provided that the tribe
15 or appropriately authoritative representative of an Indian religion has informed the
16 agency of the existence of such a site.

17 The American Indian Religious Freedom Act (AIRFA) (42 USC § 1996) established
18 Federal policy to protect and preserve the rights of Native Americans to believe, express,
19 and exercise their traditional religions, including providing access to sacred sites. The
20 Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §§ 3001–
21 3013) requires consultation with Native American Tribes prior to excavation or removal
22 of human remains and certain objects of cultural importance. NAGPRA requires that if a
23 discovery occurred in connection with an activity including, but not limited to,
24 construction, the person shall cease the activity in the area of discovery, make a
25 reasonable effort to protect the items discovered before resuming such activity, and
26 provide notice under this subsection. The head of the appropriate agency must then
27 locate the appropriate federally recognized Indian tribe and determine the appropriate
28 next course of action.

29 **1.3.6 Sustainability and Greening**

30 Sustainability is the ability to achieve economic prosperity while protecting the natural
31 systems of the planet and providing a higher quality of life for its people (USEPA 2008a).
32 Executive Orders that address sustainability and greening for Federal actions include:

- 1 • EO 13101, *Greening the Government Through Waste Prevention, Recycling, and*
2 *Federal Acquisition* (63 *Federal Register* [FR] 49641);
- 3 • EO 13123, *Greening the Government Through Efficient Energy Management* (64
4 FR 30851);
- 5 • EO 13148, *Greening the Government Through Leadership in Environmental*
6 *Management* (65 FR 24595);
- 7 • EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (66
8 FR 3853);
- 9 • EO 13211, *Actions Concerning Regulations That Significantly Affect Energy*
10 *Supply, Distribution, or Use* (66 FR 28355); and
- 11 • EO 13423, *Strengthening Federal Environmental, Energy, and Transportation*
12 *Management* (56 FR 3919).

13 Sustainable green building and development practices can be recognized through
14 sustainable site development, water savings, energy efficiency, materials selection and
15 indoor environmental quality. The U.S. Green Building Council (USGBC)'s Leadership
16 in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-
17 party certification program and the nationally-accepted benchmark for the design,
18 construction, and operation of high-performance green buildings (USGBC 2008).
19 USGBC updates its LEED rating systems, which are based on a set number of
20 prerequisites and credits in six major categories: (1) sustainable sites; (2) water
21 efficiency; (3) energy and atmosphere; (4) materials and resources; (5) indoor
22 environmental quality; and (6) innovation and design process (USGBC 2005). In the
23 most recent LEED rating system (version 2.2), buildings can qualify for four levels of
24 certification, in order from highest to lowest: platinum, gold, silver, and certified.
25 Benefits of constructing LEED-certified facilities include lower operating costs and
26 increased asset value, reduced waste sent to landfills, conservation of energy and water,
27 healthier and safer facilities for occupants, reduction of harmful greenhouse gas
28 emissions that incrementally contribute to global climate change, and the demonstration
29 of an owner's commitment to environmental stewardship and social responsibility.

30 **1.3.7 Other Executive Orders**

31 Additional regulatory legislation that potentially applies to the implementation of this
32 proposal includes guidelines promulgated by EO 12898, *Federal Actions to Address*
33 *Environmental Justice in Minority Populations and Low-Income Populations*, to ensure
34 that citizens in either of these categories are not disproportionately affected.

1 Additionally, potential health and safety impacts that could disproportionately affect
2 children are considered under the guidelines established by EO 13045, *Protection of*
3 *Children from Environmental Health Risks and Safety Risks*.

4 **1.3.8 Interagency and Intergovernmental Coordination for Environmental** 5 **Planning**

6 Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) is
7 a federally mandated process for informing and coordinating with other governmental
8 agencies regarding proposed actions. As detailed in 40 CFR § 1501.4(b), CEQ
9 regulations require intergovernmental notifications prior to making any detailed
10 statement of environmental impacts. Through the IICEP process, the NGB notifies
11 relevant Federal, state, and local agencies and allows them sufficient time to make known
12 their environmental concerns specific to a proposed action. Comments and concerns
13 submitted by these agencies during the IICEP process are subsequently incorporated into
14 the analysis of potential environmental impacts conducted as part of the EA.

15 **1.4 SCOPE AND ORGANIZATION OF THE DOCUMENT**

16 In order to determine the alternative best suited for the proposed development, this EA
17 will present analyses of anticipated environmental effects associated with construction
18 and operation of proposed facilities under either the Preferred Alternative or Alternative
19 1. This EA will also discuss a No-Action Alternative. The Proposed Action is described
20 in Section 2.2, and the Alternatives are discussed in Section 3.

21 The EA identifies, evaluates, and documents the anticipated environmental impacts of the
22 Proposed Action and Alternatives. Existing resource conditions at the project site are
23 described in Section 4, *Affected Environment*. Along with information presented for the
24 No-Action Alternative, these conditions comprise the baseline against which potential
25 effects of the Preferred Alternative and Alternative 1 are assessed. Section 4 presents
26 baseline information on resources potentially impacted by development of the proposed
27 Readiness Center project. Resource discussions include:

- 28 • Land Use and Visual Resources
- 29 • Air Quality
- 30 • Noise
- 31 • Geology and Soils
- 32 • Water Resources

- 1 • Biological Resources
- 2 • Cultural Resources
- 3 • Socioeconomics
- 4 • Environmental Justice
- 5 • Infrastructure and Safety
- 6 • Traffic and Transportation
- 7 • Hazardous and Toxic Materials and Waste

8 The potential environmental impacts of the Alternatives are described in Section 5.0,
9 *Environmental Consequences*. This analysis includes *direct* impacts (those caused by an
10 action and occurring at the same time and place); *indirect* impacts (those caused by an
11 action but occurring later or in a physically disconnected location, but within a
12 reasonably foreseeable time or geographic area); and any *cumulative* impacts of the
13 Alternatives when considered in the context of other past, present, and reasonably
14 foreseeable future actions, regardless of whether they are federal or nonfederal.
15 Actions/measures that could lessen identified impacts are identified where appropriate.

16 Section 6.0 compares and contrasts the environmental impacts of the Proposed Action
17 and Alternatives and presents the conclusions of the analysis. Section 7.0 provides a list
18 of the data sources cited in this document, including previous EAs, other documents,
19 maps, databases, and personal communication. Section 8.0 contains a list of preparers of
20 this document. Section 9.0 presents a list of the agencies and individuals consulted for
21 preparation of this document, including federal and state agencies, local agencies and
22 individuals, and federally recognized tribes.

23 Appendix A includes correspondence with state and federal agencies consulted as part of
24 this EA. Appendix B presents information related to the public involvement process,
25 including the Notice of Availability (NOA) of the document for public review, as well as
26 public comments and associated responses.

27 **1.5 PUBLIC INVOLVEMENT**

28 The NVARNG provides opportunities for the public to participate in the NEPA process
29 to promote open communication and improve their decision-making process. All persons
30 and organizations identified as having potential interest in the Proposed Action and
31 Alternatives – including minority, low-income, and Native American groups – are
32 encouraged to participate in the process. Formal opportunities to comment include a 30-

- 1 day period for public review of the draft EA and, if no significant impacts are identified,
- 2 a 30-day period for public review of the final EA and draft FNSI.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

SECTION 2
DESCRIPTION OF THE PROPOSED ACTION

2.1 INTRODUCTION

The NVARNG is a dual-mission organization under the control of the Federal government (DoD) and the State of Nevada (Governor). Its Federal mission is to *provide units trained and ready to respond to Federal mobilizations as directed by Congress or the President*. The NVARNG’s state mission is to *provide a regulated militia for the State of Nevada in support of the State Constitution and to protect the lives and property of the public, both citizens and visitors, in times of emergency, disorder, or disaster*. In addition, the self-assigned community mission of the NVARNG is *to add value to the Nevada community through local Guard activities, programs, and events*.

The Proposed Action would comprise a total of 333,842 sf of development, including construction of a new Readiness Center and associated infrastructure for the NVARNG (Figure 2-1), as well as the purchase of renewable energy to support existing and proposed facilities at the FETC. The purpose of the Proposed Action is to provide the NVARNG with training, administrative, and storage facilities necessary to achieve proficiency in required training tasks to support the missions of the assigned units. The proposed facilities would house all elements of the 100th QMC (a total strength of 188 reserve soldiers) and the 240th ENC (a total strength of 162 reserve soldiers). In addition, six full-time (enlisted) administrative personnel would work in the proposed Readiness Center. Mission activities associated with the 240th ENC would involve training activities conducted on open space within FETC during drill weekends; including staging, mobilization, and minor vertical construction training activities in order to ensure the unit and equipment are prepared for mobilization. The 100th QMC would also use the proposed facilities for necessary administrative and storage areas. However, while the 100th QMC will conduct some of its training activities at FETC, including mobilization and maintenance training, the majority of primary training activities of the 100th QMC would be accomplished at Lake Mead or other regional water bodies, where a water source would be available for water purification training activities.

2.2 PROPOSED ACTION

The Proposed Action includes three distinct components:

- Construction of a Readiness Center;

- 1 • Construction of associated infrastructure and improvements; and,
- 2 • Generation/purchase of renewable energy to support existing and proposed
- 3 facilities at the FETC

4 The Proposed Action would be implemented only after applicable regulatory agencies
5 have been consulted and required permits have been obtained; consultation and
6 permitting through these agencies may result in slight changes to the Proposed Action or
7 mitigation measures proposed in this document.

8 Assessment of potential environmental impacts and implementation of the Proposed
9 Action will involve coordination with the following agencies:

- 10 • USFWS under Section 7 of the ESA;
- 11 • Nevada SHPO under Section 106 of the NHPA.

12 **2.3 PROJECT COMPONENTS**

13 **2.3.1 Readiness Center**

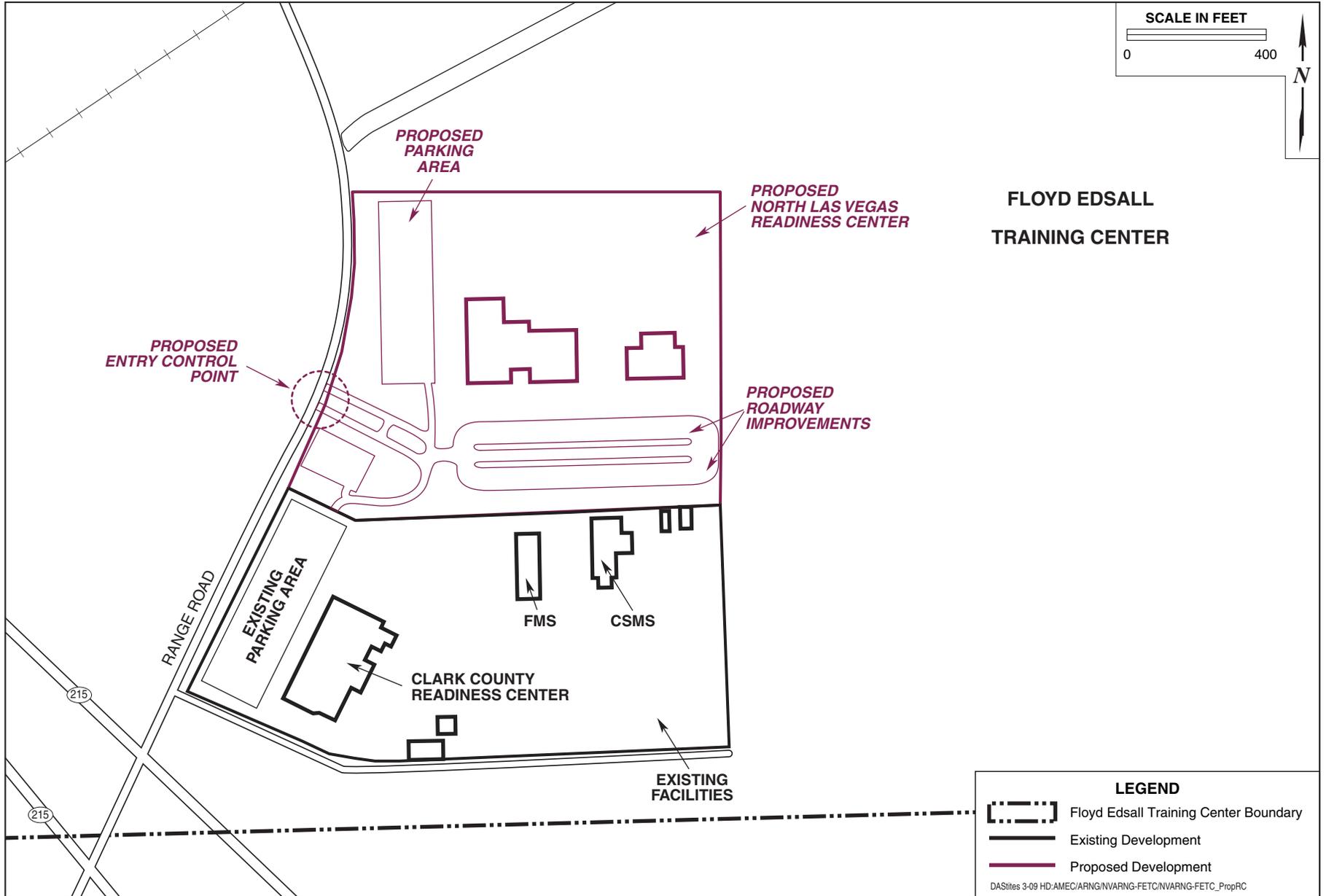
14 Implementation of the Proposed Action would provide a new Readiness Center of
15 permanent-type construction to serve the peace-time missions (administration and
16 training) of assigned units (Figure 2-1). The proposed North Las Vegas Readiness Center
17 would consist of a 68,593-sf facility, housing administrative offices, classrooms, lockers,
18 latrines, kitchen space, storage areas, and workbays. The design concept for the new
19 Readiness Center comprises a single-story, masonry-type structure with cost-effective,
20 energy-efficient mechanical and electrical systems. The style and visual character of the
21 structure would be a contextual response considering regional influences and existing
22 buildings already in place around the new facility. Exterior building materials would
23 consist of masonry and insulated metal panel wall systems with energy-efficient, *low-e*
24 insulated window glazing systems.

25 Additional components of the proposed Readiness Center would include a 10,000-sf
26 unheated metal storage building, a 300-sf controlled waste handling facility, and a 250-sf
27 guard shack/entry control point. The existing Clark County Readiness Center would not
28 be demolished or removed and would continue to support current operations at FETC.

29 Activities conducted at the proposed Readiness Center would typically include
30 administrative activities (e.g., personnel processing, recruiting), individual training (e.g.,
31 training of individual soldiers in their military occupational specialty), large-group



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

**Proposed Readiness Center at the Floyd Edsall Training Center
Nevada Army National Guard, North Las Vegas, Nevada**

**FIGURE
2-1**

1 training events (e.g., drill weekends), and logistics (e.g., inventory, accounting, control of
2 equipment assigned to the unit). These activities would occur within and in the vicinity
3 of the Readiness Center building and throughout FETC.

4 **2.3.2 Infrastructure**

5 Infrastructure and other system upgrades associated with the Proposed Action would
6 include security measures, paving for roads and parking, and extension of existing
7 utilities. Security measures compliant with Anti-Terrorism/ Force Protection (AT/FP)
8 standards would be incorporated into facility design, including adequate setbacks from
9 roads, parking areas, and vehicle unloading areas, as well as fencing, berms, heavy
10 landscaping, and bollards. Approximately 2,128 feet of new fencing would be
11 constructed along the perimeter of the project site. Primary vehicular access to the new
12 facility would be provided by a new access road established along the southern edge of
13 the project site and would include approximately 45,000 sf of paving. In addition,
14 approximately 36,000 sf of sidewalk would be constructed for pedestrian circulation and
15 access within the complex. Approximately 99,225 sf of paved surface would be provided
16 for privately owned vehicle (POV) parking. Military vehicle (MV) parking would be
17 located on the northern side of the project site and would include approximately 74,475 sf
18 of space. Extension of gas, sewer, water, and communication utilities from systems
19 already in place at FETC would be completed to serve the new facilities.

20 **2.3.3 Purchase of Renewable Energy**

21 The Proposed Action would include the purchase of renewable energy to support the
22 needs of existing FETC facilities and new facilities associated with the Proposed Action.
23 Purchase of renewal energy would allow the Proposed Action to comply with Executive
24 Order 13423 – *Strengthening Federal Environmental, Energy, and Transportation*
25 *Management* – and the NGB-mandated eMS regarding increased renewable energy use,
26 and assist the NVARNG with state-wide compliance.

27 **2.3.4 Construction Activities**

28 It is anticipated that construction of the Readiness Center would commence in 2010 and
29 continue for a duration of approximately 24 months. Daily construction activities would
30 begin not earlier than 7 AM and end no later than 5 PM. Heavy equipment used during
31 construction would include scrapers, bulldozers, excavators, and heavy-haul transporters.
32 Construction crews would average 20 personnel daily. Lay-down and staging areas

1 would remain on the actual project site at a location to be determined during a planned
2 pre-construction meeting between the NVARNG and the City of North Las Vegas.
3 Waste materials would be disposed of by an approved NVARNG contractor at an
4 appropriate landfill site and best management practices (BMPs) would be incorporated to
5 reduce potential impacts during construction. BMPs and mitigation measures that would
6 be implemented during construction and operation of the proposed facilities are discussed
7 further in Section 5.14, *Mitigation Measures and Best Management Practices*.

- 1 • Site must be in an area where land uses are compatible with military mission
2 activities, local zoning restrictions, and surrounding land uses;
- 3 • Site must provide adequate space for the project, including adequate space for
4 AT/FP elements, and preferably provide space for future expansion;
- 5 • Site must offer ease of site access, including adequate left-turn distances to
6 facilitate engineering unit equipment movement;
- 7 • Site must be located in the Las Vegas area, which distributes assets from existing
8 NVARNG facilities;
- 9 • Site must be in an area with adequate demographics to support the recruiting
10 needs of the units;
- 11 • Site must provide access to McCarran International Airport to facilitate
12 emergency access of NVARNG air assets and Air Guard units and support
13 equipment;
- 14 • Site must be visible from a public street, to increase NVARNG community
15 presence;
- 16 • Site must minimize potential environmental issues, including biological, noise,
17 and disruption of natural drainage;
- 18 • Site must not be cost prohibitive due to access to public utilities, site grading, or
19 property costs;
- 20 • Site must have the ability to obtain regulatory approvals in a timely fashion; and
- 21 • Site must be located adjacent to other reserve component forces (joint campus),
22 where possible.

23 After a screening of potential alternative sites using the criteria above, it was determined
24 that the existing FETC was the only feasible location for implementation of the Proposed
25 Action due to its size, compatible surrounding land use activities, and collocation with
26 existing NVARNG facilities with easy access to major arterials. This site meets virtually
27 all of the above criteria and comprises a fairly level parcel adequate in size to
28 accommodate training activities and providing easy access to Interstate 15 and McCarran
29 International Airport. In addition, the FETC site is located on land held by Bureau of
30 Land Management, where the NVARNG is the only user included in the current
31 recreation and public purpose land patent.

32 The adequacy of each alternative for achieving the objectives of the NVARNG was
33 evaluated, and a summary of those evaluations is provided below.

1 **3.2 ALTERNATIVES EVALUATED**

2 Two primary development alternatives were considered for the proposed development at
3 FETC. The first alternative (Preferred Alternative) would include construction of the
4 proposed Readiness Center and associated infrastructure, as well as construction of a
5 Solar Photovoltaic System (SPVS) at FETC and associated Power Purchase Agreement
6 (PPA) with a private utility developer through which renewable energy would be
7 purchased. The other alternative (No Solar Component Alternative) would include
8 construction of the proposed Readiness Center and associated infrastructure and purchase
9 of renewable energy from an off-site source. Both alternatives would be located at the
10 existing FETC. Both alternatives would meet the operational effectiveness criteria; both
11 would meet the *purpose* and *need* of the Proposed Action; both would be located on land
12 managed by the NVARNG in close proximity of to training ranges; both would provide
13 adequate space for expansion and AT/FP requirements per DoD standards; and both
14 would be located in relatively close proximity to existing utilities and Interstate 15.
15 Alternatives that did not meet the screening criteria were not evaluated further.

16 **3.2.1 Preferred Alternative**

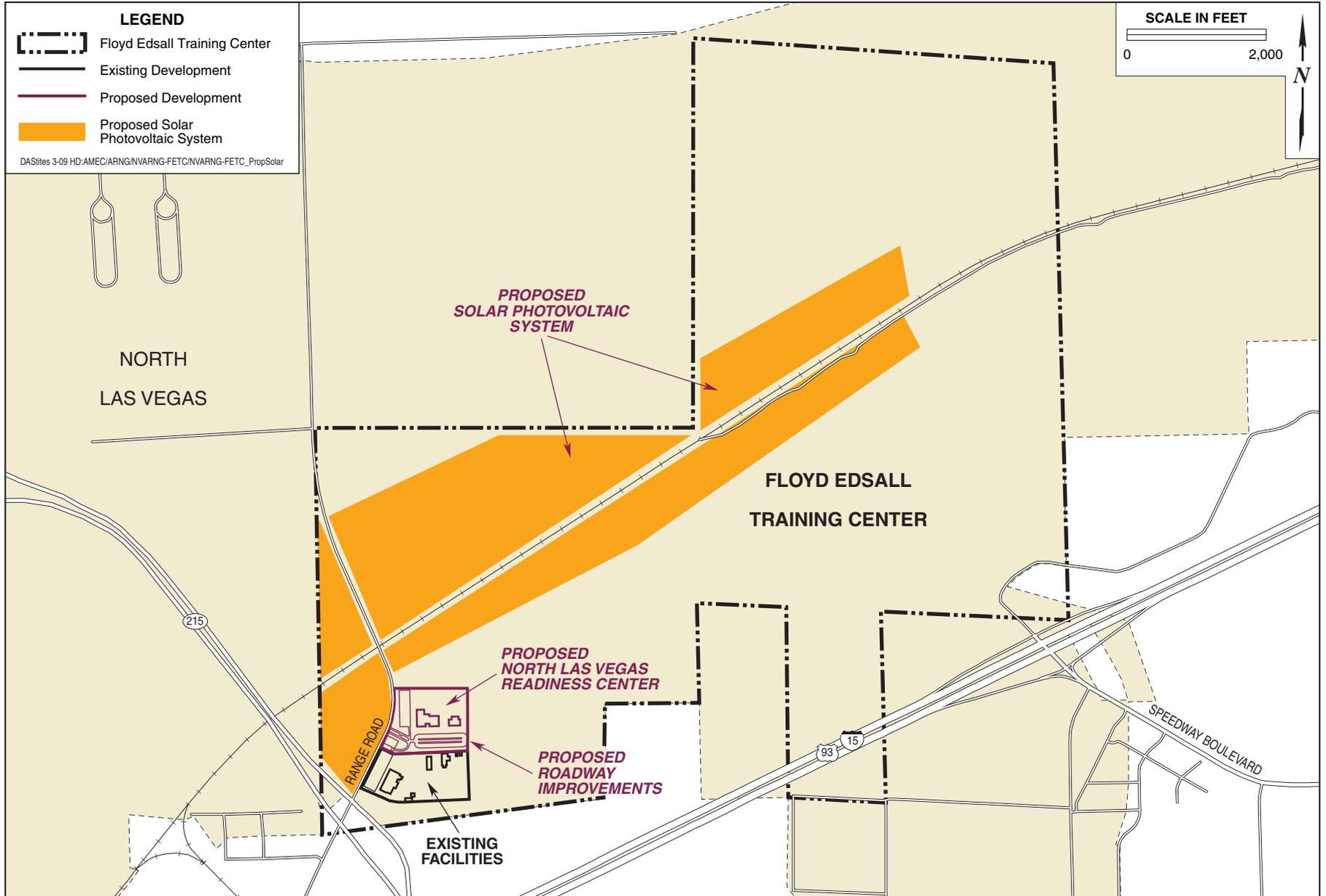
17 The Preferred Alternative would involve construction of the proposed Readiness Center
18 and associated infrastructure for the NVARNG, as well as construction of a 300-acre
19 SPVS, on the approximately 1,700-acre FETC and associated training areas located on
20 land controlled by the NVARNG. The proposed facilities would house all elements of
21 the 100th QMC (a total strength of 162 reserve soldiers) and the 240th ENC (a total
22 strength of 188 reserve soldiers). In addition, the SPVS would provide existing FETC
23 facilities and the proposed Readiness Center with a cost-efficient renewable energy
24 source to augment the existing power supply, which relies heavily on fossil fuels. Details
25 about construction and operation of the SPVS are further described below.

26 **3.2.1.1 Solar Photovoltaic System**

27 The Preferred Alternative would include the installation of an approximately 300-acre
28 SPVS which would be located immediately north of the proposed Readiness Center
29 (Figure 3-1). The SPVS would consist of solar panel arrays able to generate up to 39
30 megawatts (MW) of direct current which would be transformed into approximately 30
31 MW of alternating current. The system could include a combination of south-facing
32 fixed arrays, as well as solar tracking arrays. The arrays would be embedded into the



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Proposed Solar Photovoltaic System at the Floyd Edsall Training Center
Nevada Army National Guard, North Las Vegas, Nevada

FIGURE
3-1

1 ground with concrete footings, and conduit would be run underground to existing
2 electrical utilities.

3 Construction activities associated with the SPVS would be minor, and would consist of
4 small-scale localized grading and trenching, and assembly of the solar arrays within the
5 project area. A staging area consisting of a permanent awning structure would be
6 established within the project area for the assembly and maintenance of solar panels. The
7 entire SPVS site would be enclosed by a chain link fence and access would be limited to
8 a single gate-controlled entry. Maintenance and cleaning of the solar panels would be
9 conducted by the private utility developer.

10 FETC is comprised of a 1,670 acre site located on land is owned by the U.S. Bureau of
11 Land Management (BLM) which places the land under a recreation and public purpose
12 patent. The NVARNG is the only occupant on the patent and its authorized uses on the
13 patent are in perpetuity. Currently, NVARNG is in communication with BLM to
14 examine the possibility of constructing the proposed SPVS and to determine if its
15 proposed operation would constitute a commercial use and be non-compliant with the
16 terms of the recreation and public purpose patent. A three-way Power Purchase
17 Agreement (PPA) between NV Energy (utility), NVARNG (customer), and a private
18 utility developer could potentially facilitate the construction and operation of the SPVS.
19 Under the PPA, NVARNG could grant a private utility developer access to and use of
20 land to install and operate the SPVS to produce solar energy. The private utility
21 developer would provide 100 percent of the funding required to install and maintain the
22 SPVS and would sell approximately 90 percent of produced energy to NV Energy for
23 distribution via its utility power grid system. The NVARNG could purchase
24 approximately 3 MW of this electricity to support energy needs associated with existing
25 FETC facilities and the proposed Readiness Center.

26 **3.2.2 No Solar Component Alternative**

27 The No Solar Component Alternative would also be located within the FETC and
28 associated training areas. Under this alternative, construction of the Readiness Center
29 and associated infrastructure improvements would remain as previously described under
30 the Preferred Alternative, but installation of the SPVS would not be included as part of
31 the project. In order to comply with Executive Order 13423 and the NGB-mandated eMS
32 on renewable energy use, the NVARNG would purchase renewable energy at retail rates
33 from an off-site supplier but would not establish new alternative energy infrastructure

1 that would contribute renewable energy supply to the grid. As a result, the NVARNG
2 would not contribute to the generation of or facilitate purchase of renewable energy in
3 accordance with the proposed PPA under the Preferred Alternative.

4 **3.2.3 No-Action Alternative**

5 An environmental analysis of a No-Action Alternative is required by NEPA and CEQ
6 regulations to serve as a benchmark against which the Proposed Action can be evaluated.
7 Under the No-Action Alternative, the Readiness Center and associated infrastructure
8 would not be constructed, and NVARNG activities would continue to be housed in
9 inadequate facilities which do not meet the security or operational requirements of the
10 current mission. This alternative would allow current operations to continue; however,
11 the lack of adequate facilities and the location of existing facilities would continue to
12 hinder the affected units' ability to meet required mobilization readiness levels. In
13 addition, the NVARNG would not purchase renewable energy for existing facilities at
14 FETC and the proposed Readiness Center and would continue to rely heavily on
15 electricity produced through the consumption of fossil fuels (e.g., coal).

1 which places the land under a recreation and public purpose patent. The NVARNG is the
 2 currently the only occupant on the patent; however other external organizations could
 3 potentially become occupants on the patent in the future. Current installation facilities
 4 include the existing Readiness Center and Cantonment Area, both of which are located in
 5 the southwest portion of installation property. A majority of the land at FETC is
 6 currently undeveloped (NVARNG 2007a).

7 4.1.1.1 FETC Site Development Master Plan

8 The NVARNG *FETC Site Development Master Plan* (NVARNG 2007a) outlines current
 9 land use at the installation and provides a framework for future development. A number
 10 of facilities and training areas have been proposed at the installation for use by either the
 11 NVARNG or external organizations. The plan addresses development compatibility and
 12 adjacencies for each proposed project, and presents a *Preferred Master Plan Concept*
 13 (NVARNG 2008a). Details about the FETC Master Plan, including proposed uses by the
 14 NVARNG and external organizations, are further discussed below.

15 NVARNG Land Use

16 The FETC Master Plan outlines anticipated land use requirements by NVARNG at the
 17 installation. Multiple facilities and training areas are planned, including the proposed
 18 Readiness Center (NVARNG 2007a). Table 4-1 presents a summary of proposed land
 19 use at FETC land use by the NVARNG.

20 **Table 4-1. Proposed Land Use by NVARNG, FETC Site Development Master Plan**

| Details | Anticipated Land Use | |
|---|----------------------|--------------|
| | Facility (sf) | Site (acres) |
| Unit Training Equipment Site (UTES) | 170,000 | 30 |
| Existing Readiness Center | 75,000 | 10 |
| Regional Training Institute (RTI) | 250,000 | 50 |
| Proposed Readiness Center | 175,000 | 15 |
| New Aviation Readiness Center | 75,000 | 10 |
| Army Aviation Support Facility | 70,000 | 20 |
| Military Operations on Urban Terrain (MOUT) Training Area | -- | 25 |
| Shoot House | -- | 5 |
| Driving, Land Navigation, Tank Crew Proficiency Course (TCPC) | -- | 200 |
| Obstacle Course | -- | 6 |
| Prisoner of War (POW) Compound | -- | 10 |
| Engineering | -- | 12 |
| Driving | -- | 200 |
| Other (includes buildings and land uses not classified above) | 12,900 | 27 |
| Total Anticipated Land Use | 827,900 | 620 |

21 Source: NVARNG 2007a.

1 External Organization Land Use

2 Land use by a number of external organizations is also outlined in the FETC Master Plan.
3 Five agencies plan facilities and/or training areas at the installation (NVARNG 2007a).
4 Table 4-2 presents a summary of proposed land use by external organizations at FETC.

5 **Table 4-2. Proposed Land Use by External Organizations, FETC Site Development**
6 ***Master Plan***

| Details | Anticipated Land Use | |
|--|----------------------|--------------|
| | Facility (sf) | Site (acres) |
| Department of Public Safety and Highway Patrol | 27,000 | 5 |
| Emergency Vehicle Operations Course (EVOG) | 45,000 | 223 |
| Department of Health and Human Services | 36,000 | 10 |
| Department of Motor Vehicles (DMV) | 35,000 | 15 |
| Nevada Department of Transportation (NDOT) | 26,400 | 5 |
| Total Anticipated Land Use | 169,400 | 258 |

7 Source: NVARNG 2007a.

8 4.1.1.2 Easements and Other Land Use Restrictions at FETC

9 Approximately 797 acres at FETC are subject to varying levels of land use restrictions
10 which reduce or eliminate the ability to construct permanent facilities (NVARNG 2007a),
11 as further described below and shown on Figure 4-1.

12 Utilities and Transportation Easements

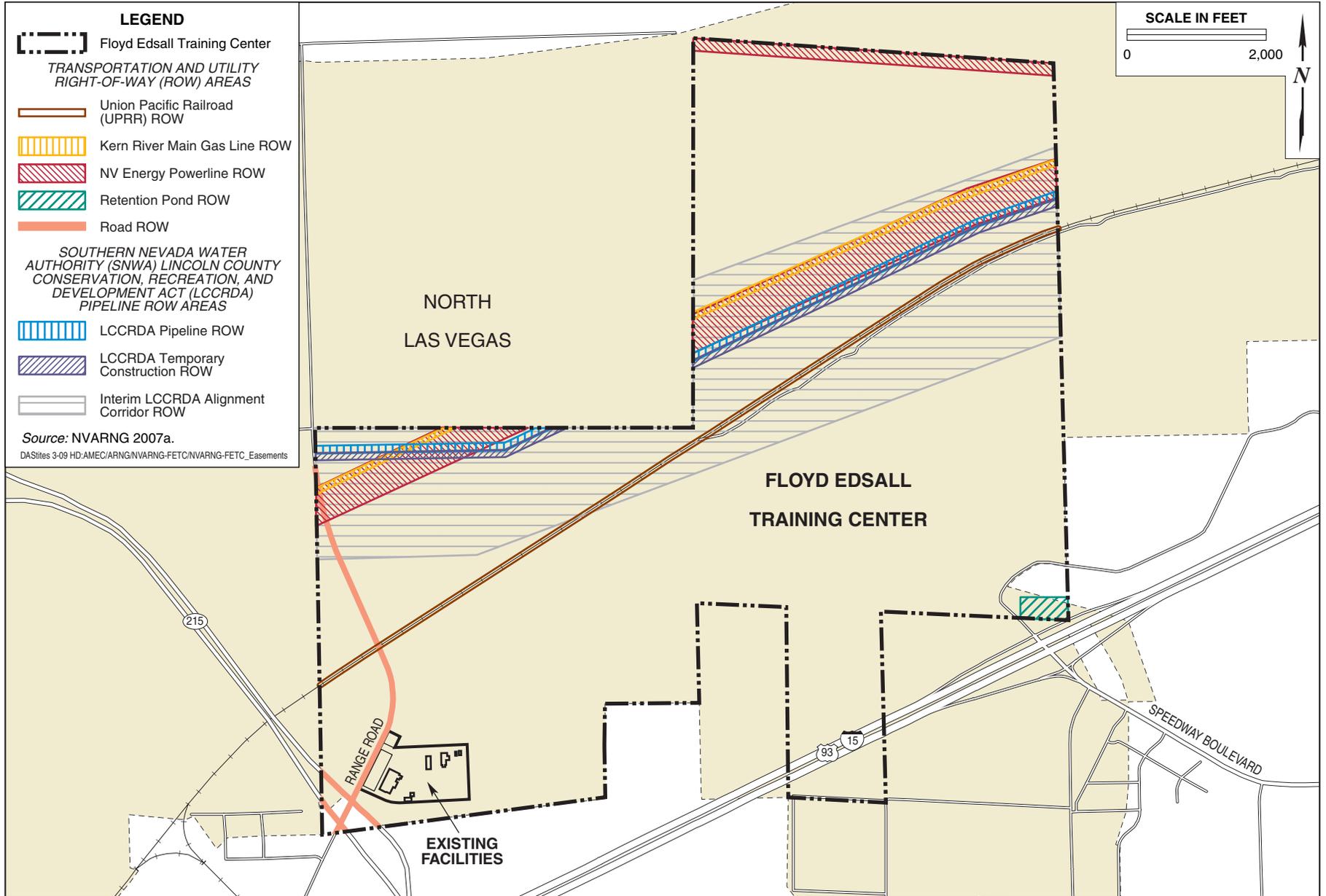
13 Utilities and transportation easements comprise about 195 acres of installation property
14 (Figure 4-1). Union Pacific Railroad (UPRR), powerline, and gas pipeline easements run
15 diagonally across the installation's northern portion. An additional powerline easement is
16 located along the installation's northernmost perimeter. Road easements are located
17 throughout FETC. Construction is not permitted in easement areas (NVARNG 2007a).

18 Southern Nevada Water Authority Pipeline Right-of-Way

19 A 0.5-mile wide right-of-way (ROW) associated with a future Southern Nevada Water
20 Authority (SNWA) water line runs across the northern portion of FETC (Figure 4-1).
21 The ROW is reserved for several potential SNWA water line alignments, but would be
22 largely opened to development once a finalized alignment is selected (NVARNG 2007a).



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Easements and Other Land Use Restrictions at Floyd Edsall Training Center

FIGURE 4-1

1 **4.1.2 Surrounding Land Use**

2 Areas surrounding FETC are comprised of three jurisdictional areas. Land use, zoning
3 designations, and applicable plans and policies for each area are further discussed below.

- 4 • *City of North Las Vegas.* The installation is located within the corporate limits of
5 North Las Vegas; the city also surrounds FETC to the west, south, and east.
- 6 • *Nellis Air Force Base (AFB) and Associated Small Arms Training Range.* Nellis
7 AFB is located approximately 2 miles south of FETC. The Nellis AFB Small
8 Arms Range is located immediately north of the installation.
- 9 • *Unincorporated Clark County.* Areas to the southwest of FETC are located in
10 unincorporated Clark County, within the unincorporated town of Sunrise Manor.

11 4.1.2.1 City of North Las Vegas

12 Land use in the City of North Las Vegas is comprised of two categories. *Current Land*
13 *Use* describes current zoning within city corporate limits. *Proposed Land Use* describes
14 anticipated land use as detailed in the city’s *Comprehensive Master Plan* (City of North
15 Las Vegas 2006a). In many cases, current and proposed land use are classified the same.

16 Current Land Use

17 Current City of North Las Vegas zoning in the vicinity of FETC is comprised of three
18 primary designations: *industrial*, *commercial*, and *open land* (City of North Las Vegas
19 2007a). Subcategories within these designations are further described in Table 4-3
20 below.

21 **Table 4-3. Current City of North Las Vegas Zoning in the Vicinity of FETC**

| Designation | Allowed Uses | Direction from FETC |
|--------------------------|---|---|
| Industrial | | |
| Business Park (M-1) | Light industrial uses in a low-density business park setting (e.g., offices, light warehousing) | Southeast |
| General Industrial (M-2) | Light industrial uses, including light manufacturing; limited intensity of use | West, South, East |
| Commercial | | |
| General Commercial (C-2) | Regional shopping centers, highway or strip commercial, and professional business parks | Immediately South |
| Open Land | | |
| Open Land (O-L) | Open areas with no other current designation; development limited to low-density residential | FETC Installation, West, East, Some South |

22 Source: City of North Las Vegas 2006a 2007a.

1 Proposed Land Use

2 The City of North Las Vegas *Comprehensive Master Plan* outlines a number of proposed
 3 changes to current zoning and land use designations in the vicinity of FETC (Figure 4-2).
 4 Typically, proposed land use would remain similar to current zoning, but with more
 5 specific restrictions or uses allowed (City of North Las Vegas 2006a, 2006b). Table 4-4
 6 presents details on proposed land use designations in the vicinity of the installation.

7 **Table 4-4. Proposed Land Use Designations in the Vicinity of FETC**

| Designation | Allowed Uses | Direction from FETC |
|--------------------------------|---|-----------------------------|
| Industrial | | |
| Employment (E) | Low-intensity industrial (e.g., technical laboratories, light manufacturing, etc.) | West, Immediately East |
| Heavy Industrial (HI) | Industrial uses of a higher intensity (e.g., manufacturing, processing, warehousing) | Southwest, South, Southeast |
| Commercial | | |
| Resort Commercial (RC) | Casinos and accessory uses (e.g., restaurants, hotels, retail, etc.) | Immediately South |
| Community Commercial (CC) | Regional shopping centers, highway/strip commercial, professional business parks | Southwest |
| Residential | | |
| Multi-Family Residential (MFR) | Multi-family residential development, including condominiums and apartments | West |
| Mixed-Use | | |
| Mixed-Use Neighborhood (MUN) | Mix of residential and commercial units; allows up to 16-25 units per acre, depending upon proximity to transit | Immediately West |
| Mixed-Use Commercial (MUC) | Mix of residential and commercial units; allows up to 16-25 units per acre, depending upon proximity to transit | West |
| Public | | |
| Public/Semi-Public (PSP) | Open or developed public lands | FETC Installation |

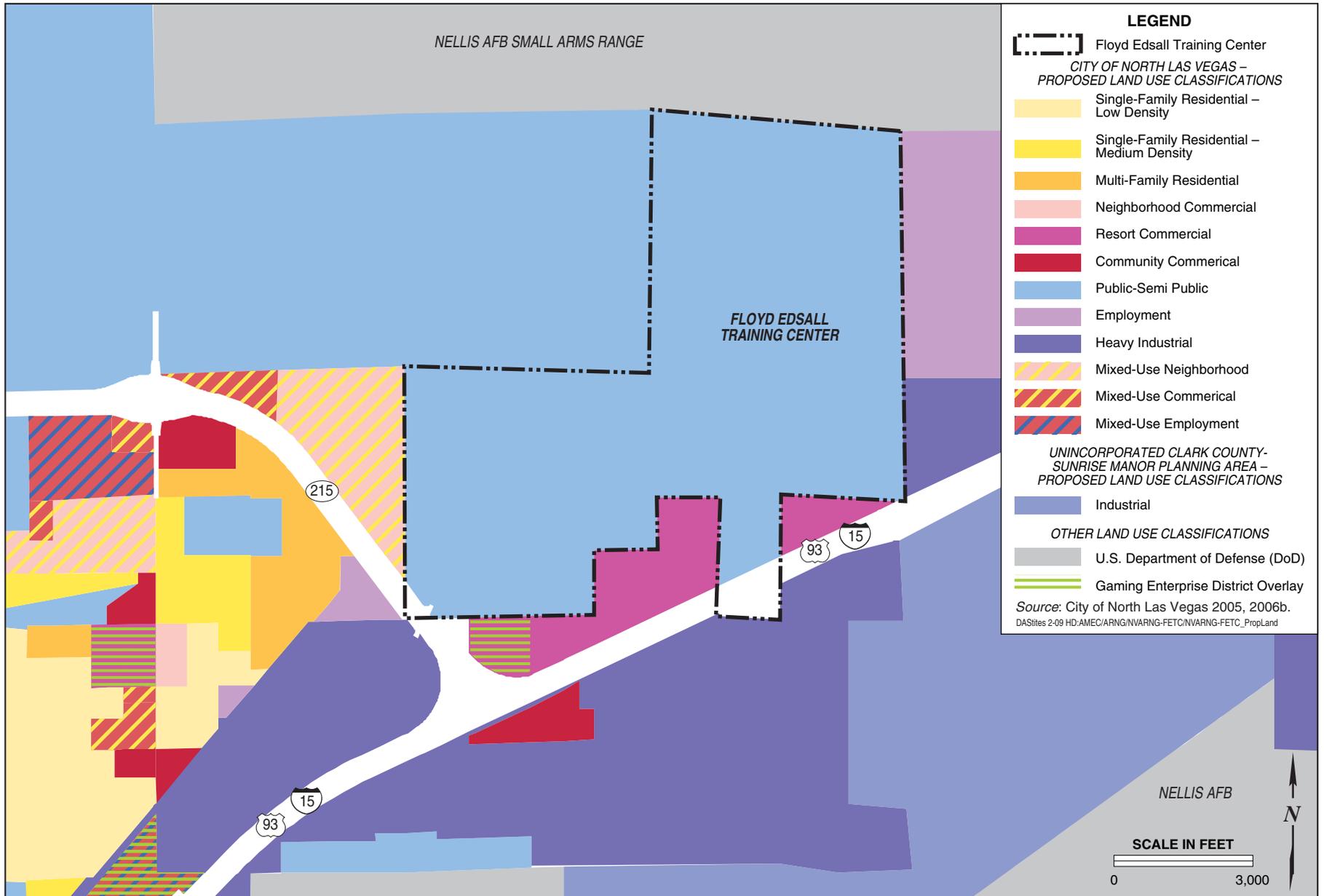
8 Source: City of North Las Vegas 2006a, 2006b.

9 Gaming Enterprise District Overlay

10 Several RC parcels, as designated in North Las Vegas *Master Plan*, contain a *Gaming*
 11 *Enterprise District Overlay*, which has been established throughout Clark County to
 12 permit unrestricted 24-hour gaming operations on specified commercial parcels. Parcels
 13 with the overlay are identified as locations where probable development of casino
 14 operations is likely to occur (City of North Las Vegas 2005).



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Proposed Land Use Designations in the Vicinity of Floyd Edsall Training Center

FIGURE 4-2

1 4.1.2.2 Nellis AFB and Associated Small Arms Training Range

2 Two DoD installations are located in the immediate vicinity of FETC: *Nellis AFB* and the
3 *Nellis AFB Small Arms Training Range*.

4 Nellis AFB is a 13,743-acre U.S. Air Force (USAF) installation located approximately 2
5 miles south of FETC. Nellis AFB contains a variety of land uses, including airfield
6 operations, maintenance facilities, training areas, and areas of residential and commercial
7 development. Approximately half of Nellis AFB land area is open space (USAF 2002).

8 The 10,575-acre Nellis AFB Small Arms Training Range is located adjacent to the north
9 perimeter of FETC. The Training Range is an open space area with multiple ranges
10 utilized for weapons testing and training (NVARNG 2008b).

11 4.1.2.3 Unincorporated Clark County

12 Areas to the southwest of FETC are located in unincorporated Clark County, within the
13 unincorporated town of Sunrise Manor. Current zoning includes commercial, industrial,
14 and rural open land (Clark County 2008a). Proposed zoning, as outlined in the *Sunrise*
15 *Manor Land Use Plan* (Clark County 2005), would be industrial, intensity unspecified.

16 **4.1.3 Visual Resources**

17 FETC is located at the northeast corner of Las Vegas Valley, an elongated valley oriented
18 northwest to southeast between four mountain ranges. The dominant physical feature is
19 the Las Vegas Range, a once volcanic series of mountains with jagged peaks rising
20 sharply above the Valley's northern fringe. The Sunrise and Frenchman Mountains
21 provide relief east of the Valley, ascending gradually through the river terraces and
22 alluvial fans of the Muddy Mountain Range. Occasional alluvial washes and dry streams
23 score the otherwise horizontal Valley floor.

24 The proposed project site is visible from Interstate (I-) 15, Clark County Route (CC-)
25 215, and Range Road. Views from the proposed project site include sporadic residential
26 and commercial development to the west and south, the Las Vegas Motor Speedway to
27 the east, and open desert land to the northwest, north, and northeast. Beyond immediate
28 views are vistas of the Las Vegas Range to the north, the Sunrise and Frenchman
29 Mountains to the east, and the Cities of North Las Vegas and Las Vegas to the southwest.

1 **4.2 AIR QUALITY**

2 The following Air Quality discussion will be focused on the Proposed Action in terms of
3 (a) regional and local regulations for air pollutant standards and emissions, (b) sensitive
4 receptors, and (c) on-site emission sources.

5 **4.2.1 Air Quality Conditions**

6 Air quality in a given location is determined by the concentration of various pollutants in
7 the atmosphere. NAAQS have been established by the USEPA and adopted by the
8 Nevada Division of Environmental Protection (NDEP) Bureau of Air Quality Planning
9 (BAQP). NAAQS represent maximum levels of background pollution that are
10 considered safe, with an adequate margin of safety, to protect public health and welfare.
11 Criteria pollutants include O₃, CO, NO₂, SO₂, PM₁₀ and PM_{2.5}, and Pb. National and
12 Nevada ambient air quality standards are presented in Table 4-5.

13 Areas that violate national air quality standards are designated as non-attainment areas for
14 the relevant pollutants; areas that comply with the standards are designated as attainment
15 areas for the relevant pollutants; areas of questionable status generally are designated as
16 unclassifiable areas.

17 The USEPA General Conformity Rule (40 CFR 93, Subpart B and 40 CFR 51) requires
18 all Federal agencies to ensure that any agency action or activity conforms to an approved
19 SIP. This applies only to Federal actions in non-attainment or maintenance areas. This
20 rule applies to FETC because the installation is situated within a non-attainment area for
21 the NAAQS for CO and PM₁₀.

22 The General Conformity Rule requires analysis of total direct and indirect emissions of
23 criteria pollutants, including precursors, when determining conformity of the proposed
24 action. The rule applies if the proposed action's emissions are more than ten percent of
25 an area's total emissions of a given pollutant, are considered "regionally significant", or
26 if emissions exceed *de minimis* thresholds. The applicable *de minimis* thresholds for the
27 Las Vegas Valley area in Clark County are 100 tons per year or greater for CO, 70 tons
28 per year or greater of PM₁₀, and 100 tons per year or greater for each ozone precursor
29 (VOC and NO_x). If *de minimis* thresholds are exceeded, a General Conformity
30 Determination shall be made.

1 **Table 4-5. National and Nevada Ambient Air Quality Standards**

| Pollutant | Averaging Time | Nevada ^{(a)(b)} | National ^{(a)(b)} | Standard Type ^{(c)(d)} |
|------------------------|------------------------|--|--|---------------------------------|
| O ₃ | 8 hour | -- | 0.075 ppm (147 µg/m ³) (2008 std) ^(e) | Primary & Secondary |
| | 8 hour | -- | 0.08 ppm (156 µg/m ³) (1997 std) ^(e) | Primary & Secondary |
| | 1 hour | 0.12 ppm (235 µg/m ³) | 0.12 ppm (235 µg/m ³) | Primary & Secondary |
| CO | 8 hour | 9.0 ppm (10 mg/m ³)/ 6.0ppm (6.67 mg/m ³) ^(f) | 9.0 ppm (10 mg/m ³) | Primary |
| | 1 hour | 35 ppm (40 mg/m ³) | 35 ppm (40 mg/m ³) | Primary |
| NO ₂ | Annual Arithmetic Mean | 0.053 ppm (100 µg/m ³) | 0.053 ppm (100 µg/m ³) | Primary & Secondary |
| SO ₂ | Annual Arithmetic Mean | 0.03 ppm (80 µg/m ³) | 0.03 ppm (80 µg/m ³) | Primary |
| | 24 hour average | 0.14 ppm (365 µg/m ³) | 0.14 ppm (365 µg/m ³) | Primary |
| | 3 hour average | 0.50 ppm (1,300 µg/m ³) | 0.50 ppm (1,300 µg/m ³) | Secondary |
| PM ₁₀ | Annual Arithmetic Mean | 50 µg/m ³ | 50 µg/m ³ | Primary & Secondary |
| | 24 hour | 150 µg/m ³ ^(f) | 150 µg/m ³ ^(g) | Primary & Secondary |
| PM _{2.5} | Annual Arithmetic Mean | -- | 15 µg/m ³ ^(h) | Primary & Secondary |
| | 24 hour | -- | 35 µg/m ³ ⁽ⁱ⁾ | Primary & Secondary |
| Pb | Calendar Quarter | 1.5 µg/m ³ | 1.5 µg/m ³ | Primary & Secondary |
| Hydrogen Sulfide | 1 hour | 112 µg/m ³ | -- | |
| Visibility Observation | | In sufficient amount to reduce the prevailing visibility to less than 30 miles when the humidity is less than 70 percent | -- | |

2 Notes: ^(a) Standards other than for ozone and those based upon annual averages are not to be exceeded more than once
3 per year. The ozone standard is attained when the expected number of days per calendar year with
4 maximum hourly average concentrations above the standard is equal to or less than one.

5 ^(b) Concentrations are expressed first in units in which they were promulgated. Equivalent units are given in
6 parentheses.

7 ^(c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the
8 public health. Each state must attain the primary standards no later than 3 years after that state's
9 implementation plan is approved by the USEPA.

10 ^(d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or
11 anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a
12 "reasonable time" after the USEPA approves the implementation plan.

13 ^(e) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone
14 concentrations measured at each monitor with an area over each year must not exceed 0.075ppm (effective
15 May 27, 2008). The 1997 standard-and the implementation rules for that standard-will remain in place for
16 implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone
17 standard to the 2008 ozone standard.

18 ^(f) First standard applies at elevations less than 5,000 feet above msl. The second standard applies at elevations
19 equal to or greater than 5,000 feet above msl. Not to be exceeded more than once per year.

20 ^(g) Not to be exceeded more than once per year, averaged over three years.

21 ^(h) To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or
22 multiple community-oriented monitors must not exceed 15.0 µg/m³.

23 ⁽ⁱ⁾ To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each
24 population-oriented monitor within an area must not exceed 35µg/m³.

25 µg/m³ – micrograms per cubic meter

26 mg/m³ – milligrams per cubic meter

27 ppm – parts per million

28 Source: USEPA 2008a.

1 **4.2.2 Clean Air Act Amendments**

2 The Clean Air Act Amendments of 1990 place most of the responsibility to achieve
3 compliance with NAAQS on individual states. To this end, USEPA requires each state to
4 prepare a SIP. A SIP is a compilation of goals, strategies, schedules, and enforcement
5 actions that will lead the state into compliance with all NAAQS. Areas not in compliance
6 with a standard can be declared *non-attainment* areas by USEPA or the appropriate state
7 or local agency. In order to reach *attainment*, NAAQS may not be exceeded.

8 **4.2.3 Regional Setting**

9 Clark County has an arid desert climate, and is considered a basin, bounded to the
10 southeast by the Colorado River and by mountain ranges on all sides. The average
11 annual rainfall is 4.13 inches per year. The mean annual temperature is 66.3 degrees
12 Fahrenheit (°F), and the mean temperature for Spring is 56°F, Summer 82°F, Fall 78°F,
13 and Winter 48°F. Winds in the Las Vegas area are predominantly from the southwest in
14 the spring and summer; winds shift more westerly during the winter. Wind speed in the
15 winter averages 10 miles per hour (mph) and 8 mph in the summer (National Weather
16 Service 2005).

17 **4.2.4 Local Setting**

18 Compliance with the NAAQS is derived from data at ambient air monitoring stations
19 located throughout the state, including monitoring stations in the vicinity of the FETC.
20 The Clark County Department of Air Quality and Environmental Management
21 (DAQEM) enforces air quality regulations in Clark County. The FETC is under the
22 jurisdiction of the Clark County DAQEM; however the remainder of the State, except for
23 Washoe County, is under the jurisdiction of the State of Nevada Division of
24 Environmental Protection, Bureau of Air Pollution Control (BAPC). The FETC is
25 located in North Las Vegas, adjacent to CC-215 and the I-15 Freeway, and is
26 approximately two miles north of Nellis AFB.

27 Clark County has approximately 20 ambient air quality monitoring stations. The County
28 has historically had difficulties keeping ambient dust concentrations below NAAQS. In
29 2003, a public information campaign was launched to increase awareness about dust
30 pollution; this campaign has been shown to be working and has allowed the County to
31 maintain Federal air pollution funding. The County is a non-attainment area for 8-hour
32 ozone. The Las Vegas Planning area of the County is considered a *serious* non-

1 attainment area for PM₁₀ and CO. All other criteria pollutants have been designated as
2 being in attainment (USEPA 2008b).

3 The closest air quality monitoring station to the FETC is the Crag Road station at 4701
4 Mitchell Street, which has been in operation since September 6, 2006. This station
5 monitors ozone, PM₁₀, and PM_{2.5}. The JD Smith station, at 1301B East Tonopah, is the
6 nearest station that monitors NO_x. The Winterwood station, at 5483 Club House Drive, is
7 the nearest station that monitors CO.

8 The FETC is not considered a major source of air pollutants, and therefore does not have
9 a Federal Title V permit. Clark County's SIP emission inventory for criteria pollutants is
10 presented in Table 4-6.

11 **Table 4-6. Clark County Emissions for Criteria Pollutants (tons per year)**

| | PM ₁₀ | CO | NO _x | SO ₂ | VOC |
|-----------------|------------------|---------|-----------------|-----------------|-----|
| Total Emissions | 333,133 | 168,825 | 43,004 | 2,064 | N/A |

12 Source: USAF 2006.

13 **4.2.5 Sensitive Receptors**

14 The impact of air emissions on sensitive members of the population is a special concern.
15 Sensitive receptor groups include children, the elderly, and the acutely and chronically ill.
16 The locations of these groups include residences, schools (grammar schools and high
17 schools), playgrounds, daycare centers, convalescent homes, and hospitals. The closest
18 residential areas, which could house young children, are approximately 1.5 miles
19 southwest of the area proposed for roadway and building construction. The nearest
20 sensitive receptors in the vicinity of the proposed project include: Lowman, Manch, and
21 Heard Elementary schools, located approximately 2.5 miles south of the proposed
22 building construction at FETC. In addition, Woolley and Cox Elementary are located
23 approximately 3 miles southwest of the proposed construction. The closest hospital is
24 Sunrise Hospital, located approximately 10 miles south of FETC.

25 **4.3 NOISE**

26 Average noise exposure over a 24-hour period is often presented as day-night average
27 sound level (DNL), measured in A-weighted decibels (dBA). DNL values are calculated
28 from average hourly noise levels, in which the values for the nighttime periods (10 PM to
29 7 AM) are increased by 10 dBA. Such weighting of evening and nighttime noise levels is
30 intended to take into account the greater human disturbance potential of nighttime noises.

1 There are two primary types of noise sources in the urban environment: transportation
2 and non-transportation. Transportation noise includes mobile sources such as vehicular
3 traffic, aircraft, and trains. Non-transportation, or stationary, sources include
4 construction, maintenance, and other facility-based sources. The discussion regarding
5 noise will focus on the following aspects: (a) noise guidelines, (b) sensitive receptors, (c)
6 on-site noise emissions.

7 **4.3.1 Noise Guidelines**

8 4.3.1.1 Federal Guidelines

9 The *Noise Control Act*, 42 USC 4901, requires that all Federal agencies comply with
10 applicable Federal, state, interstate, and local noise control regulations. Federal agencies
11 are directed to administer their programs in a manner that promotes an environment that
12 is free from noise which jeopardizes public health or welfare.

13 U.S. Department of the Army (US Army) Regulation 200-1, *Environmental Protection*
14 *and Enhancement*, outlines the US Army's *Installation Operational Noise Management*
15 *Program*, which supplements the Noise Control Act. Noise-sensitive land uses, such as
16 housing, schools, and medical facilities, are compatible with a noise environment of less
17 than 65 dBA when the noise is from transportation sources such as vehicles and aircraft,
18 or from continuous non-transportation sources such as generators.

19 4.3.1.2 State and Local Guidelines

20 A search of applicable guidelines and regulations did not identify any State of Nevada
21 noise-abatement requirements. The City of North Las Vegas' *Municipal Code* contains a
22 noise control chapter which prohibits noise related to construction activities between the
23 hours of 9 PM to 6 AM (City of North Las Vegas 2008b).

24 **4.3.2 Noise Conditions**

25 4.3.2.1 Sensitive Noise Receptors

26 The nearest potentially-sensitive receptor consists of residences which are located
27 approximately 0.75 miles west of the proposed project site (City of North Las Vegas
28 2006a). No churches, hospitals or other sensitive noise receptors are located within one
29 mile of the proposed project site.

1 4.3.2.2 Noise Sources

2 The noise environment at the proposed project site is dominated primarily by large trucks
3 and other vehicle traffic from I-15 and CC-215, as well as by ambient noise from air
4 traffic activity associated with Nellis AFB. The majority of activities occurring at
5 existing FETC facilities, such as administrative office work conducted indoors, are not
6 significant noise generators. Outdoor noise-generating activities are limited to Inactive
7 Duty Training (IDT) weekends, and may include setting up large tents, short-term testing
8 or emergency operation of small generators or air compressors, vehicle maneuvers, and
9 vehicle maintenance.

10 **4.4 GEOLOGY AND SOILS**

11 Analysis of geology and soils includes consideration of bedrock materials, stratigraphy,
12 topography, soils, seismic hazards, slope stability, mineral resources, unique landforms,
13 paleontology, and geologic conditions that may affect construction, design, or influence
14 contaminant distribution and groundwater. This section describes the geologic and
15 seismic setting at the site, which includes regional and site-specific geologic descriptions,
16 area soils, and regional and local faulting. In addition, geologic hazards that may affect
17 the site and/or project design are also addressed.

18 **4.4.1 Geologic Setting**

19 4.4.1.1 Physiography

20 Clark County, Nevada is located in the Basin and Range physiographic province, which
21 is characterized by north-south trending mountain ranges enclosing basin-shaped valleys.
22 The Las Vegas and Arrow Canyon Ranges, located to the north of the valley, rise sharply
23 to elevations of more than 7,000 feet above mean sea level (msl). The McCullough
24 Range, located southeast of the valley, ascends more gradually through river terraces and
25 alluvial fans to more than 5,000 feet above msl. The Spring Mountains, located
26 southwest of the valley, also ascend more gradually to more than 10,000 feet above msl
27 (U.S. Geological Survey [USGS] 1984).

28 4.4.1.2 Geology

29 The City of North Las Vegas and FETC are located in the northwest portion of the Las
30 Vegas Valley, near the base of the Las Vegas Mountain Range. The mountain range is
31 dominated by Paleozoic (542 to 251 million years ago) carbonate rocks interspersed with
32 smaller amounts of quartzite, sandstone, and shale. The valley floor in the vicinity of

1 FETC contains numerous alluvial fans dissected by a multitude of drainage channels.
2 The alluvial fans are comprised of poorly sorted gravelly and stony sand deposits at the
3 foot of the mountain range, and gradually transition to finer textured material toward the
4 valley floor. Much of the surficial alluvium is Late Pleistocene (less than 13,000 years
5 old), and alluvial deposition continues through seasonal stormwater events (NVARNG
6 2007b). Valley fill deposits range from 2,000 to 5,000 feet thick (NVARNG 2006a)

7 4.4.1.3 Soils

8 Soils at FETC are primarily composed of Weiser Extremely Gravelly Fine Sandy Loam,
9 2 to 8 percent slopes. Small depositions of three soil types are located in the vicinity of
10 the existing Readiness Center, including: Las Vegas-McCarran-Grapevine Complex, 0 to
11 4 percent slopes; Weiser-Goodsprings Complex, 2 to 4 percent slopes; and, Las Vegas
12 Gravelly Fine Sandy Loam, 0 to 2 percent slopes. Additionally, various depositions of
13 Pits/Gravel, slopes undefined, are located throughout the installation, including four large
14 depositions in the southeast portion of installation property and a small deposition in the
15 northwest corner of installation property (U.S. Natural Resource Conservation Service
16 [USNRCS] 2007a). Figure 4-3 shows the soil types present at FETC.

17 Weiser Extremely Gravelly Fine Sandy Loam

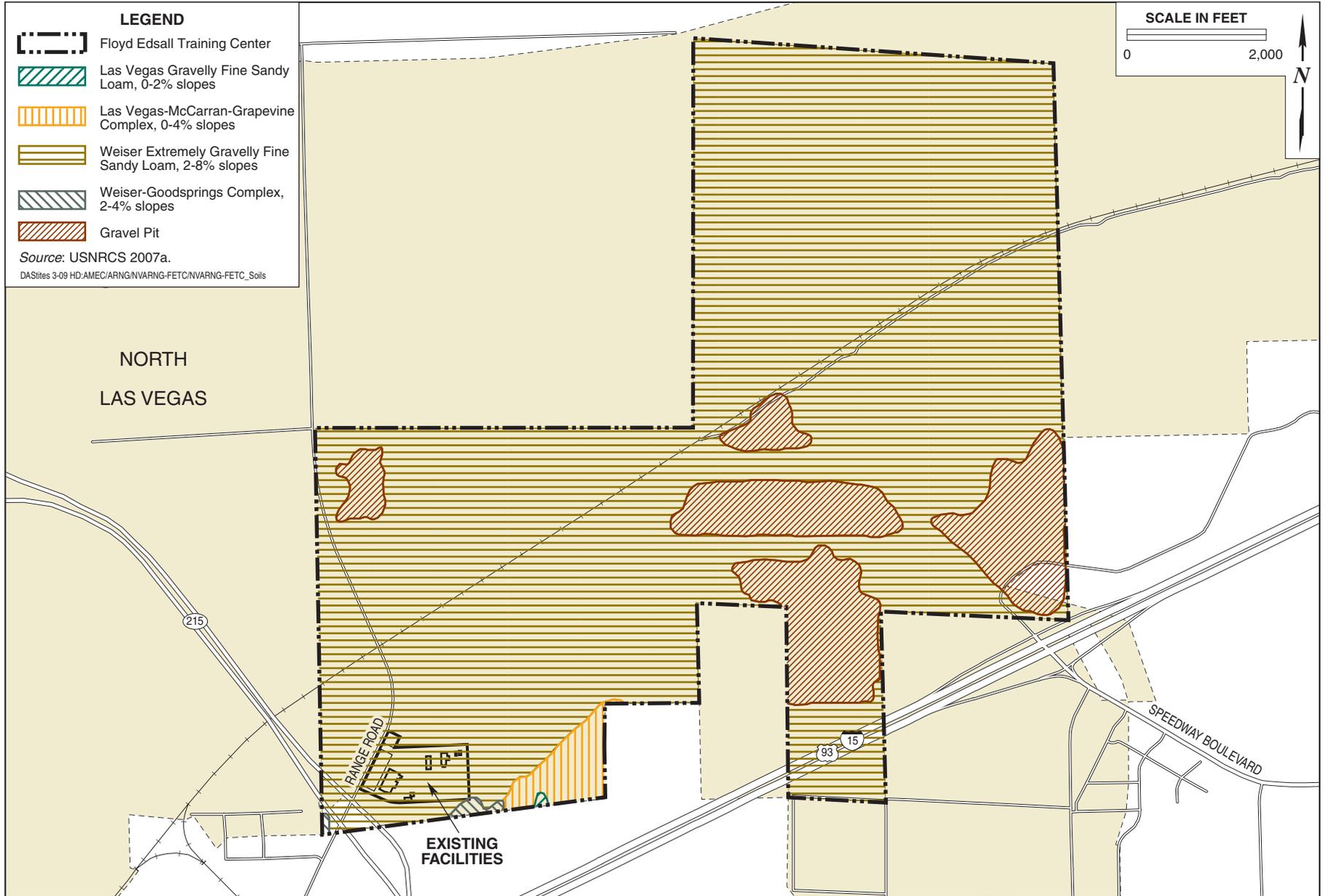
18 Weiser Extremely Gravelly Fine Sandy Loam is fully composed of Weiser soils at slopes
19 of 2 to 8 percent. The typical soil profile is comprised of extremely gravelly fine sandy
20 loam at the surface, and stratified extremely gravelly sandy loam to very gravelly fine
21 sandy loam at depths greater than 1 inch. The soil is well-drained and is not subject to
22 flooding or ponding. The soil is typically found in fan remnants, and parental material is
23 composed of alluvium derived from limestone and dolomite (USNRCS 2007a).

24 Las Vegas-McCarran-Grapevine Complex

25 The Las Vegas-McCarran-Grapevine Complex is comprised of 40 percent Las Vegas
26 soils, 0 to 4 percent slopes; 25 percent McCarran soils, 0 to 4 percent slopes; 20 percent
27 Grapevine soils, 0 to 4 percent slopes; and, 15 percent minor component soils, slopes up
28 to 5 percent. The typical soil profile consists of fine to very fine sandy loam at depths of
29 up to 0.5 feet, and a mixture of gypsiferous material, stratified fine sandy loam, gravelly
30 sandy clay loam, and clay loam at depths of greater than 0.5 feet. The complex is well-
31 drained and is not subject to flooding or ponding. The complex is typically found in
32 basin-floor remnants, and parental material is composed of mixed alluvium derived from
33 limestone and sandstone (USNRCS 2007a).



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Soil Types Present at Floyd Edsall Training Center

FIGURE 4-3

1 Weiser-Goodsprings Complex

2 The Weiser-Goodsprings Complex is comprised of 60 percent Weiser soils, 2 to 4 percent
3 slopes; 25 percent Goodsprings soils, 2 to 4 percent slopes; and, 15 percent minor
4 component soils, slopes up to 10 percent. The typical soil profile consists of very
5 gravelly sandy loam at depths of up to 0.5 feet, and a mixture of very gravelly fine sandy
6 loam and cemented soils at depths of greater than 0.5 feet. The complex is well-drained
7 and is not subject to flooding or ponding. The complex is typically found in fan
8 remnants, and parental material is composed of alluvium derived from limestone,
9 dolomite, and sandstone (USNRCS 2007a).

10 Las Vegas Gravelly Fine Sandy Loam

11 Las Vegas Gravelly Fine Sandy Loam is fully composed of Las Vegas soils at slopes of 0
12 to 2 percent. The typical soil profile is comprised of gravelly fine sandy loam at depths
13 of up to 1 inch, fine sandy loam at depths of 1 inch to 0.5 feet, gravelly sandy clay loam
14 at depths of 0.5 to 1.0 feet, and hardened soils at depths of greater than 1.0 feet. The soil
15 is well-drained and is not subject to flooding or ponding. The soil is typically found in
16 basin-floor remnants, and parental material is composed of alluvium derived from
17 limestone (USNRCS 2007a).

18 Pits/Gravel

19 Pits/Gravel, slopes undefined, consists of depositions of gravel which form small relief
20 areas (USNRCS 2007a).

21 4.4.1.4 Mineral Resources

22 Throughout its history, Clark County has produced large amounts of metallic and
23 nonmetallic commodities, including zinc, lead, gold, silver, copper, manganese, gypsum,
24 limestone, dolomite, silica sand, and sand and gravel. In addition, some Clark County
25 mines have intermittently produced small but significant amounts of other commodities
26 such as vanadium, cobalt, nickel, platinum, palladium, uranium, tungsten, perlite, clay,
27 borates, salt, and turquoise (Nevada Bureau of Mines and Geology [NBMG] 1965).

28 According to NBMG, no mining activity has occurred within FETC. The closest major
29 operational mine to FETC is Apex Quarry and Plant, located approximately 5 miles
30 northeast of the installation, which mines dolomite and lime (NBMG 2007a).

1 **4.4.2 Potential Geologic Hazards**

2 4.4.2.1 Faulting and Seismicity

3 Historic earthquake activity in the state of Nevada has been mostly concentrated in the
4 north-central portion of the state, in Churchill, Mineral, and Pershing Counties. Clark
5 County contains a number of Late Pleistocene (less than 13,000 years old) and other
6 Quaternary (1.8 million years ago to present) faults (NBMG 2003, 2007b). A majority
7 of the faults mapped in the Las Vegas metropolitan region are located in the western
8 portion of Las Vegas Valley (NBMG 2003); however, the Las Vegas Valley Shear Zone,
9 a major northwest-southeast trending fault zone, is located immediately south of the
10 installation. Evidence suggests shear zone slippage in the vicinity of FETC (NVARNG
11 2006a).

12 The probability of earthquakes of various magnitudes occurring within 50 years within 50
13 kilometers of major communities in Nevada has been calculated by NBMG. According
14 to NBMG’s analysis, the Las Vegas metropolitan region is characterized by low to
15 moderate seismic activity when compared to other regions in the state of Nevada. Clark
16 County is predicted to have a 10 to 20 percent chance of experiencing an earthquake
17 greater than 6.0 in magnitude and less than 5.0 percent chance of experiencing an
18 earthquake greater than 6.5 in magnitude within a given 50 year period. By comparison,
19 a number of counties located in the north-central portion of the state (Carson City,
20 Churchill, Douglas, Lyon, Mineral, Storey, and Washoe) are predicted to have a greater
21 than 60 percent chance of experiencing an earthquake greater than 6.0 in magnitude
22 within a given 50 year period (NBMG 2007b).

23 4.4.2.2 Expansive Soils

24 Soils having high plasticity, such as clays, can expand when wetted and shrink during
25 drying with sufficient force that they damage overlying improvements. Weiser
26 Extremely Gravelly Fine Sandy Loam and the Las Vegas-McCarran-Grapevine Complex
27 both have low shrink-swell potential, while Pits/Gravel contain no shrink-swell potential
28 (NRCS 2007b). Therefore, the potential for expansive soils at FETC is considered low.

29 **4.5 WATER RESOURCES**

30 Water resources considered in this analysis include surface water and drainage, flood
31 hazards, groundwater, wetlands, and water quality. Surface water resources comprise
32 lakes, rivers, streams, and wetlands and are important for a variety of economic,

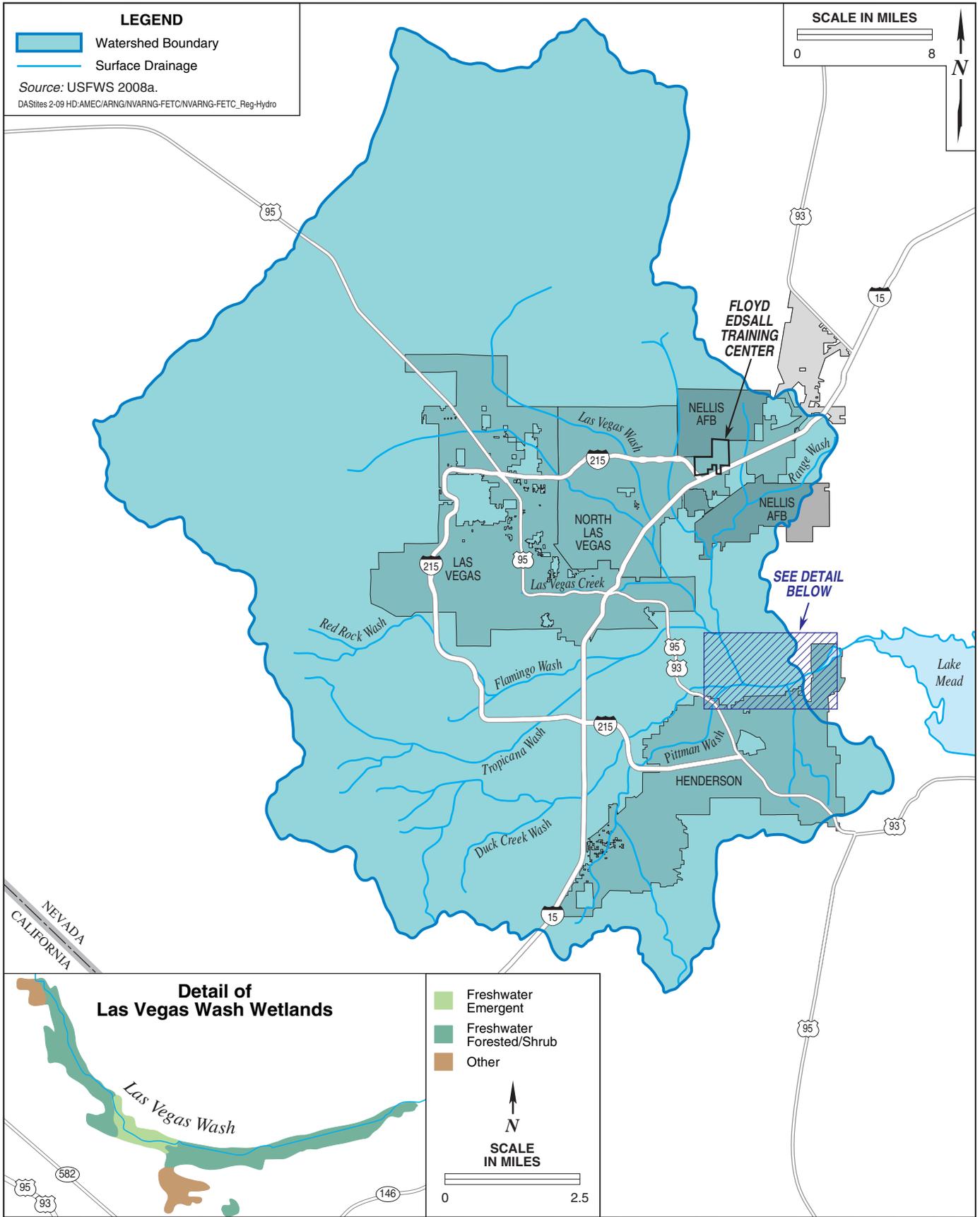
1 ecological, recreational, and human health reasons. Groundwater comprises the
2 subsurface hydrologic resources of the physical environment and is an essential resource
3 in many areas; groundwater is commonly used for potable water consumption,
4 agricultural irrigation, and industrial applications. Groundwater properties are often
5 described in terms of depth to aquifer, aquifer or well capacity, and surrounding geologic
6 composition.

7 **4.5.1 Regulatory Overview**

8 The CWA identifies certain pollutants and sets required treatment levels for those
9 pollutants. Under Section 303(d) of the CWA, states are required to develop lists of
10 impaired waters. Impaired waters are water bodies for which technology-based
11 regulations are not stringent enough to meet the water quality standards set by states. The
12 CWA requires that states develop Total Maximum Daily Load (TMDL) levels of various
13 pollutants for these impaired waters. The CWA also addresses point source and non-
14 point source discharges. Section 402 establishes the National Pollutant Discharge
15 Elimination System (NPDES) program, under which permits are required for all point
16 source discharges to water of the United States, including discharges of stormwater
17 associated with construction and industrial activities.

18 **4.5.2 Surface Water**

19 FETC is located within the Colorado River hydrographic basin which encompasses
20 12,376 square miles (sq mi). The basin originates in southeastern Nevada – in parts of
21 Clark, Lincoln, Nye, and White Pine Counties – and flows southward to terminate at the
22 Colorado River (Nevada Division of Water Resources [NDWR] 2008). Within the
23 Colorado River Basin is the Las Vegas Wash watershed, which encompasses 1,564 sq mi
24 in Clark County (NDWR 2008). The watershed and major drainages of the Las Vegas
25 Valley are shown on Figure 4-4. Approximately 85 percent of the Las Vegas Wash
26 watershed consists of undeveloped natural desert areas; however, the Las Vegas
27 metropolitan area is highly developed (Reginato and Piechota 2002).



Watershed and Major Drainages of the Las Vegas Valley

FIGURE 4-4



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

1 The primary surface water resource in the vicinity of FETC is Las Vegas Wash, which
2 drains into the Colorado River at Lake Mead, southwest of the City of Las Vegas. The
3 Las Vegas Wash is located approximately 5.1 miles southwest of the installation. Several
4 large ephemeral drainages occur throughout the Las Vegas Valley; these drainages serve
5 to naturally convey storm flows to the Las Vegas Wash. There are no large ephemeral
6 drainages located near FETC (Figure 4-5).

7 Several large impounded lakes are located in or near the Las Vegas Valley, including
8 Lake Las Vegas and Lake Mead; however, no lakes of natural origin exist within the
9 Valley.

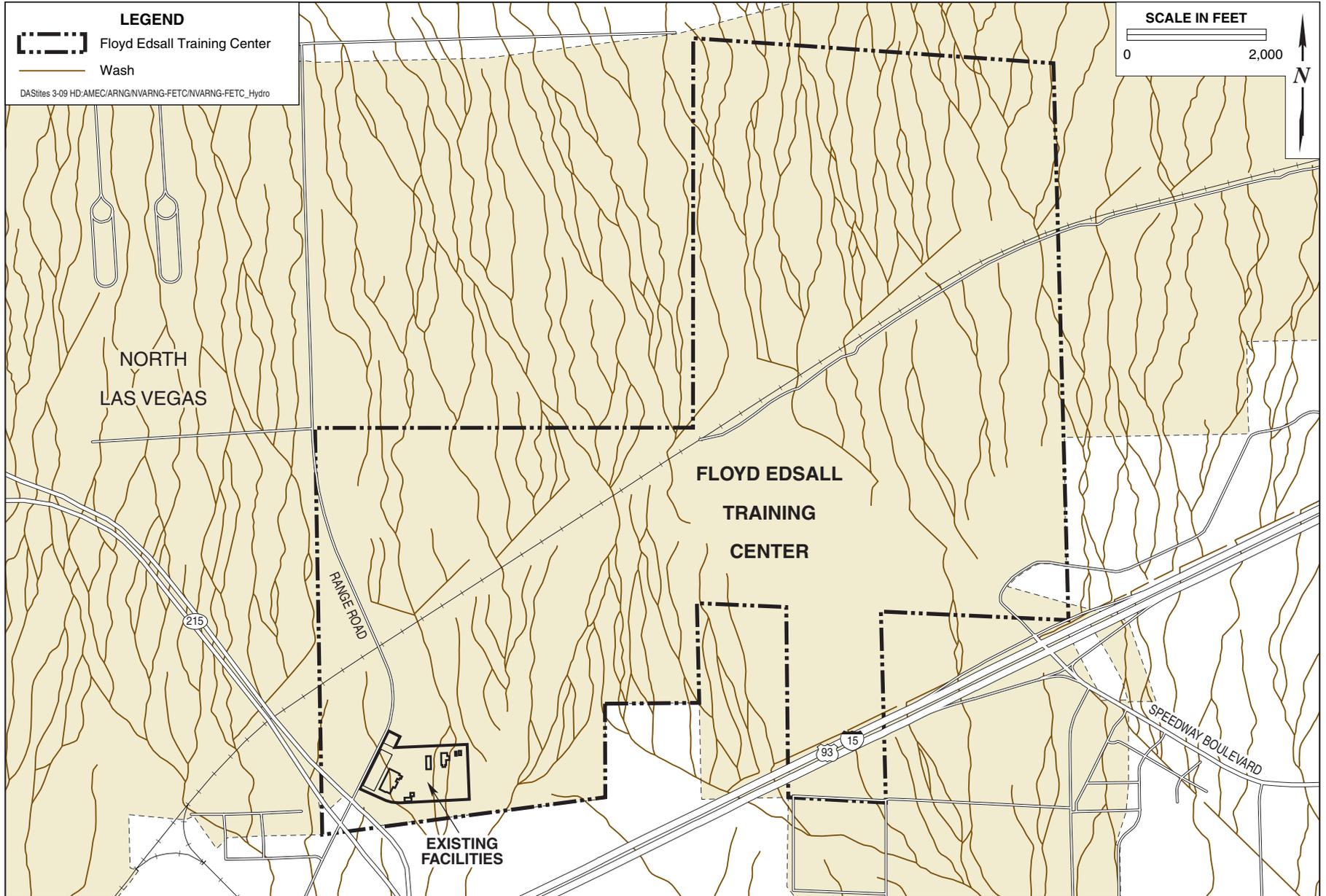
10 4.5.2.1 Surface Water Quality

11 Surface water flow from the Las Vegas Wash makes up less than two percent of the water
12 which flows into Lake Mead, but it has a direct effect on the water quality of the lake
13 (BLM 2004, Reginato and Piechota 2002, SNWA 2008a). Lake Mead is an important
14 drinking water source for Nevada, Arizona, and California. Approximately 188,000 acre-
15 feet of water are discharged by the Las Vegas Wash into the Boulder Basin, part of Lake
16 Mead, on an annual basis (USGS 2008). Factors such as high concentrations of soluble
17 salts in soils, storm water transport of contaminants and sediments, and shallow
18 groundwater contribute to poor water quality in the Las Vegas Wash. A portion of the
19 Las Vegas Wash, from Telephone Line Road to Lake Mead, is listed on the State of
20 Nevada *Section 303(d)* Impaired Waters list due to selenium, total suspended solids, and
21 iron (USEPA 2008c). This stretch of Las Vegas Wash begins approximately 18 miles
22 southeast of FETC and continues east approximately 5 miles to Lake Mead. No
23 approved TMDLs for the Las Vegas Wash have been reported to the USEPA by the State
24 of Nevada since 1995 (USEPA 2008c).

25 Surface water at FETC is ephemeral, with drainages leading into the central Las Vegas
26 Wash which feeds southeast into Lake Mead. There are no perennial streams, wetlands,
27 lakes, or ponds on FETC property (Figure 4-5). However, there are numerous ephemeral
28 washes; water flow in these washes occurs only during brief periods accompanying
29 infrequent rainfall events.



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Water Resources and Ephemeral Drainages in the Vicinity of Floyd Edsall Training Center

FIGURE 4-5

1 **4.5.3 Groundwater**

2 Groundwater resources in the Las Vegas Valley are governed by the SNWA. The Las
3 Vegas Valley aquifer system is a basin-fill aquifer, composed of discontinuous beds of
4 clay, silt, sand, gravel, and caliche that are thousands of feet thick. The principal aquifers
5 of the system occur within a 550 sq mi area (USGS 1996). Groundwater in the Las
6 Vegas Valley aquifer system is naturally recharged from precipitation in the Spring
7 Mountains to the southwest and the Sheep Range to the north. Three general aquifer
8 zones have been described within the Las Vegas Valley:

- 9 • Shallow aquifers,
- 10 • Near-surface aquifers, and,
- 11 • Principal (deep) aquifers.

12 Shallow aquifers are generally described as the upper 30 to 50 feet of saturated sediments
13 (USGS 1996, SNWA 2008b). The water table in the Las Vegas Valley is generally
14 encountered within 20 feet of ground surface (BLM 2004). This shallow aquifer
15 generally resides in the lower extent of the hydrologic basin, within the central and
16 southern parts of the valley. Water runoff from treated effluent and industrial and
17 irrigation water is trapped near the ground surface by impermeable layers of clay and
18 caliche, resulting in perched water tables in some areas of the Valley, such as northwest
19 Las Vegas (USGS 1996). Recent groundwater modeling shows that over 100,000 acre-
20 feet of irrigation water may be accumulating in these shallow areas each year (SNWA
21 2008b).

22 Near-surface aquifers generally occur at 30 to 200 feet beneath the water table. While
23 most recharge for these aquifers is from upward flow from deeper aquifers, irrigation,
24 industrial wastewater, and sewage also contribute to aquifer recharge (USGS 1996).

25 Deep, or principal, aquifers occur at more than 200 feet beneath the water table and are
26 the primary source for the drinking-water supply in the Las Vegas Valley (USGS 1996).

27 Southern Nevada, including the Las Vegas Valley, has experienced one of the largest
28 rates of population growth in the U.S. over the past several decades. Such growth has
29 placed high demands on water resources in the area, leading to over-appropriation of
30 groundwater and destabilization of groundwater levels (SNWA 2008b). In addition, the
31 decline in overall water level from over-pumping has contributed to local land subsidence
32 issues in portions of the Valley (USGS 1996). The Nevada Legislature authorized the

1 Las Vegas Valley Groundwater Management Program (LVVGWMP) to establish a
2 permanent artificial recharge program to help stabilize the water levels in the Las Vegas
3 basin (SNWA 2008b). Since 1988, more than 200,000 acre-feet of water has been added
4 back into the aquifer system. Total pumping from the groundwater basin is about 75,000
5 acre-feet per year. Water recharged into the aquifers by both natural and artificial
6 processes, as well as secondary recharge of shallow aquifers, is still greater than the total
7 water pumped out, helping to stabilize the groundwater supply (SNWA 2008b).

8 4.5.3.1 Groundwater Quality

9 The water quality in the shallow aquifer system is considered saline, with total dissolved
10 solids exceeding acceptable drinking water standards (SNWA 2008b).
11 Evapotranspiration concentrates salts in the shallow aquifer, resulting in low-quality
12 water high in total dissolved solids (Zikmund 1996). Human activities, such as over-
13 irrigation, contribute to both the presence of shallow groundwater and an increase in
14 salinity of water in the area. Contaminants such as fertilizers, organics, and soluble salts
15 from septic systems can accumulate in the shallow aquifer.

16 Groundwater resources underlying FETC consist solely of near-surface aquifers. The
17 installation is located in the upper portion of the hydrologic basin, where depth to
18 groundwater is greater than 75 feet (NVARNG 2006b). Perched water tables and the
19 shallow aquifer are not present in the vicinity of the installation. Water for FETC is
20 currently provided by the City of North Las Vegas municipal water system; no water is
21 pumped on-site from local groundwater resources (NVARNG 2006b). Wastewater
22 disposal at the installation is also handled through the North Las Vegas municipal
23 wastewater treatment system (NVARNG 2007a).

24 4.5.4 Floodplains

25 The Federal Emergency Management Agency (FEMA) maintains maps of flood
26 inundation zones for development restrictions and insurance requirements. These maps
27 indicate that FETC is outside of any mapped 100- or 500-year floodplains. According to
28 FEMA Floodplain Maps of Clark County, the installation is located within *Zone X*, an
29 area defined as containing minimal flooding hazards (FEMA 2002a 2002b).

30 4.5.5 Wetlands

31 Wetlands are defined by the USACE and the USEPA as “those areas that are inundated
32 or saturated by surface or groundwater at a frequency and duration sufficient to support,

1 and that under normal circumstances do support, a prevalence of vegetation typically
2 adapted for life in saturated soil conditions. As defined in 1984, wetlands generally
3 include swamps, marshes, bogs, and similar areas” (33 CFR 328.3 [b]). Wetlands
4 provide a variety of functions including groundwater recharge and discharge; flood-flow
5 alteration; sediment stabilization; sediment and toxicant retention; nutrient removal and
6 transformation; and support of aquatic and terrestrial diversity and abundance.
7 Jurisdictional wetlands are those subject to regulatory authority under Section 404 of the
8 CWA; EO 11990, *Protection of Wetlands*, requires analyses of potential impacts to
9 wetlands related to proposed Federal actions.

10 There are no jurisdictional wetlands located within FETC (USFWS 2008a). The nearest
11 wetlands are located at Las Vegas Wash, approximately 11 miles south of the installation.
12 Las Vegas Wash is the primary channel through which the Las Vegas Valley’s excess
13 water returns to Lake Mead (SNWA 2008a).

14 **4.6 BIOLOGICAL RESOURCES**

15 Biological resources include native or naturalized plants and animals and the habitats in
16 which they occur. Sensitive biological resources are defined as those plant and animal
17 species listed as threatened or endangered, or proposed as such, by the USFWS. Federal
18 Species of Concern are not protected by law; however, these species may become listed
19 or protected at any time.

20 A preliminary assessment of FETC and the proposed sites was conducted, focusing on
21 the potential for state- and federally-listed endangered or threatened wildlife species and
22 protected migratory birds. A records search for Clark County, Nevada included the
23 following sources:

- 24 • The USFWS Federal Endangered and Threatened Species List; and
- 25 • The Nevada Department of Wildlife (NDOW) Nevada Wildlife Action Plan
- 26 Species Accounts

27 **4.6.1 Regulatory Overview**

28 Assessment of biological resources under NEPA involves consideration of the degree to
29 which a proposed action may adversely affect an endangered or threatened species or the
30 species’ critical habitat. The principal Federal law addressing biological resources is the
31 ESA of 1973. The ESA contains regulations which forbid any person to “take” an
32 endangered or threatened species. “Take” is defined by Section 3 of the ESA as “harass,

1 harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in
2 such conduct.” The USFWS administers the ESA by listing and delisting species as
3 appropriate, designating critical habitat for listed species, and conducting Federal
4 consultation under Section 7 of the ESA in order to permit incidental take of listed
5 species for particular projects.

6 Section 7 of the ESA directs all Federal agencies to use their existing authorities to
7 conserve threatened and endangered species and, in consultation with the USFWS, to
8 ensure that their actions do not jeopardize listed species or destroy or adversely modify
9 critical habitat. Section 7 applies to management of Federal lands as well as other
10 Federal actions which may affect listed species, such as Federal approval of private
11 activities through the issuance of Federal permits, licenses, or other actions. Under
12 Section 7, a biological assessment of the proposed action is conducted to identify any
13 threatened or endangered species that are likely to be adversely affected by a proposed
14 action. The USFWS has the responsibility to review the assessment and prepare a formal
15 Biological Opinion (BO) regarding a proposed action. After completion of the formal
16 Section 7 consultation, USFWS has the authority to make a determination regarding an
17 incidental take permit for listed species after all measures are taken by the Federal agency
18 to conserve threatened and endangered species and protect designated critical habitat.

19 The Migratory Bird Treaty Act (MBTA) of 1918, establishes a Federal prohibition to
20 “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale,
21 sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver
22 for transportation, transport, cause to be transported, carry, or cause to be carried by any
23 means whatever, receive for shipment, transportation or carriage, or export, at any time,
24 or in any manner, any migratory bird, included in the terms of this Convention... for the
25 protection of migratory birds... or any part, nest, or egg of any such bird.” The MBTA
26 affirms and implements the United States’ commitments to four international conventions
27 for the protection of a shared migratory bird resource. In addition, EO 13186,
28 *Responsibilities of Federal Agencies to Protect Migratory Birds*, was introduced in 2001
29 to ensure that Federal agencies implement policies and programs which support the
30 conservation and protection of migratory birds. The USFWS has enforcement provisions
31 over these statutes as well.

32 **4.6.2 Vegetation**

33 FETC falls into the Mojave Desert section of the American Semidesert and Desert
34 Province (ecoregion), under the Tropical/Subtropical Desert Division (Bailey 1995).

1 This ecoregion covers 87,000 sq mi in southern Nevada, southeastern California, and
2 southwestern Arizona. The American Desert ecoregion includes the Mojave, Colorado,
3 and Sonoran Deserts.

4 The vegetative characteristics of FETC and the proposed project sites are predominantly
5 in the Mojave Desertscrub division, Creosote bush series (Brown 1994). Vegetation at
6 the installation is sparse, characterized by widely-spaced shrubs. A site visit conducted
7 on 16 October 2008 recorded the more common plant species at or near the proposed
8 project sites (Table 4-7). The sites are lightly disturbed from training operations which
9 occur throughout FETC property. Portions of the installation are more disturbed than
10 others due to various training activities, recreational use, and unauthorized dumping.

11 **Table 4-7. Plant Species Observed within the Proposed Project Sites**

| Common Name | Scientific Name |
|-------------------------|--------------------------------|
| Creosote bush | <i>Larrea tridentata</i> |
| White bursage | <i>Ambrosia dumosa</i> |
| Mojave yucca | <i>Yucca schidigera</i> |
| Mormon tea | <i>Ephedra</i> sp. |
| Wire lettuce | <i>Stephanomeria</i> sp. |
| Desert trumpet | <i>Eriogonum inflatum</i> |
| Saltbush | <i>Atriplex</i> sp. |
| Beavertail prickly pear | <i>Opuntia basilaris</i> |
| Cholla | <i>Cylindropuntia</i> sp. |
| Barrel cactus | <i>Ferocactus cylindraceus</i> |

12 Note: Scientific nomenclature follows United States Department of Agriculture (USDA) PLANTS Database (USDA
13 2008).

14 **4.6.3 Sensitive Habitats**

15 A review of the USFWS *National Wetland Inventory* (USFWS 2008a) and the USNRCS
16 *Soil Survey for Las Vegas Valley Area, Nevada* (USNRCS 2007a) indicated no known
17 wetlands, agricultural lands, or designated natural communities present at the proposed
18 project sites. Further, no wetlands were observed during the 16 October 2008 site visit.

19 **4.6.4 Wildlife**

20 Wildlife resources at or near the proposed project sites are limited. Resources observed
21 during the 16 October 2008 site visit include species typical of a human-influenced
22 landscape such as lizards, songbirds, and jackrabbits. Other species believed to occur at

1 or near the proposed project site include coyotes, quail, ground squirrels, cottontail
2 rabbits, and mice. These species are generally capable of adapting to an environment
3 with relatively high levels of noise and disturbance, such as that from FETC training
4 operations, Nellis AFB, the Las Vegas Motor Speedway, and adjacent roadways.

5 **4.6.5 Threatened and Endangered Species**

6 Sensitive species include those listed or proposed for listing by the USFWS as
7 endangered or threatened, candidate species for listing, or species of concern. Sensitive
8 species are provided varying levels of protection under the ESA. The NDOW is the
9 principle regulatory agency for wildlife and habitat conservation in the State of Nevada.
10 Table 4-8 displays the sensitive species listed by USFWS and NDOW as potentially
11 occurring in Clark County.

12 Suitable habitat for two of the species listed in Table 4-8 is present at FETC at or near the
13 proposed project sites. These species are the desert tortoise (*Gopherus agassizi*), a and
14 the western burrowing owl (*Athene cunicularia*), Suitable habitat for two sensitive plant
15 species, the Las Vegas bearpoppy (*Arctomecon californica*) and Las Vegas buckwheat
16 (*Eriogonum corymbosum* var. *nilesil*), may be present at FETC but has not been
17 identified in past surveys (NVARNG 2006b). The following paragraphs discuss each
18 species in more detail.

19 4.6.5.1 Desert Tortoise (*Gopherus agassizi*)

20 The desert tortoise is listed as *threatened* by both the USFWS and the State of Nevada
21 (NDOW 2004, USFWS 2008b). Habitat for the desert tortoise is almost entirely confined
22 to the warm creosote bush vegetation type characteristic of the American Desert
23 ecoregion. In general, habitat is associated with well drained sandy loam soils in plains,
24 alluvial fans, and bajadas; however, habitat may also occur in dunes, edges of basaltic
25 flow and other rock outcrops, and in well-drained and vegetated alkali flats (NatureServe
26 2008).

27 In Nevada, the native range of this species is generally restricted to Clark County and
28 portions of Nye and Lincoln Counties south of 37°N latitude and at elevations of 4,000
29 feet above msl or lower. Within this region, approximately 75 to 95 percent of
30 populations now average less than 50 tortoises per sq mi (NatureServe 2008). Tortoises
31 spend much of their time in self-constructed subterranean shelters; maximum life span is
32 greater than 50 years, though on average tortoises survive only 20 to 25 years. Forage
33

1 **Table 4-8. Federally- and State-Listed Sensitive Species Potentially Occurring in**
 2 **Clark County, Nevada**

| Common Name | Scientific Name | Federal Status | State Status |
|---|--|----------------|-----------------|
| Birds | | | |
| Golden eagle | <i>Aquila chrysaetos</i> | NL | S4 |
| Long-eared owl | <i>Asio otus</i> | NL | S4 |
| Western burrowing owl | <i>Athene cunicularia hypugaea</i> | NL | S3(B) |
| Ferruginous hawk | <i>Buteo regalis</i> | NL | S3 |
| Yellow-billed cuckoo (Western U.S. Distinct Population Segment) | <i>Coccyzus americanus</i> | C | S1(B) |
| Yellow warbler | <i>Dendroica petechia</i> | NL | S3(B) |
| Southwestern willow flycatcher | <i>Empidonax traillii extimus</i> ¹ | E | S1(B) |
| Prairie falcon | <i>Falco mexicanus</i> | NL | S4 |
| Peregrine falcon | <i>Falco peregrinus</i> | NL | S2 |
| Common yellowthroat | <i>Geothlypis trichas</i> | NL | S3(B) |
| Pinyon jay | <i>Gymnorhinus cyanocephalus</i> | NL | S4 |
| Yellow-breasted chat | <i>Icteria virens</i> | NL | S3(B) |
| Western least bittern | <i>Ixobrychus exilis hesperis</i> | NL | S2(N) |
| Loggerhead shrike | <i>Lanius ludovicianus</i> | NL | S3 |
| Flammulated owl | <i>Otus flammeolus</i> | NL | S4 |
| Phainopepla | <i>Phainopepla nitens</i> | NL | S2(B) |
| Vesper sparrow | <i>Pooecetes gramineus</i> | NL | S4(B) |
| Yuma clapper rail | <i>Rallus longirostris yumanensis</i> | E | S1 |
| Red-naped sapsucker | <i>Sphyrapicus nuchalis</i> | NL | S4, S5(B) |
| Crissal thrasher | <i>Toxostoma crissale</i> | NL | S3, S4 |
| Le Conte's thrasher | <i>Toxostoma lecontei</i> | NL | S3 |
| Lucy's warbler | <i>Vermivora luciae</i> | NL | S3(B) |
| Gray vireo | <i>Vireo vicinior</i> | NL | S3, S4(B) |
| Reptiles | | | |
| Desert tortoise (Mojave population) | <i>Gopherus agassizii</i> ² | T | S3 ⁴ |
| Banded Gila monster | <i>Heloderma suspectum cinctum</i> | NL | S2 |
| Amphibians | | | |
| Relict leopard frog | <i>Rana onca</i> | C | S1 |
| Mammals | | | |
| Spotted bat | <i>Euderma maculatum</i> | NL | S1, S2 |
| Fishes | | | |
| Moapa White River springfish | <i>Crenichthys baileyi moapae</i> | NL | S2 |
| Pahrump poolfish | <i>Empetrichthys latos</i> | E | S1 |
| Humpback chub | <i>Gila cypha</i> ¹ | E | |

1 **Table 4-8. Federally- and State-Listed Sensitive Species Potentially Occurring in**
 2 **Clark County, Nevada (Continued)**

| Common Name | Scientific Name | Federal Status | State Status |
|--------------------------|---|----------------|--------------|
| Bonytail chub | <i>Gila elegans</i> ² | E | S1 |
| Virgin River chub | <i>Gila seminude</i> ^{2,3} | E | S1 |
| Virgin River spinedace | <i>Lepidomeda mollispinis mollispinis</i> | NL | S1 |
| Moapa dace | <i>Moapa coriacea</i> | E | S1 |
| Lahontan cutthroat trout | <i>Oncorhynchus clarkii henshawi</i> | T | S3 |
| Woundfin | <i>Plagopterus argentissimus</i> ² | E | S1 |
| Colorado pikeminnow | <i>Ptychocheilus lucius</i> ¹ | E | NL |
| Moapa speckled dace | <i>Rhinichthys osculus moapae</i> | NL | S1 |
| Razorback sucker | <i>Xyrauchen texanus</i> ² | E | S1 |
| Plants | | | |
| Las Vegas bearpoppy | <i>Arctomecon californica</i> | NL | CE |
| Threecorner milkvetch | <i>Astragalus geyeri</i> var. <i>triquetrus</i> | NL | CE |
| Halfring milkvetch | <i>Astragalus mohavensis</i> var. <i>hemigyus</i> | NL | CE |
| Las Vegas cat's-eye | <i>Cryptantha insolita</i> | NL | CE |
| Las Vegas buckwheat | <i>Eriogonum corymbosum</i> var. <i>nilesil</i> | C | S1, S2 |
| Sticky buckwheat | <i>Eriogonum viscidulum</i> | NL | CE |
| Mojave barrel cactus | <i>Ferocactus cylindraceus</i> var. <i>lecontei</i> | NL | CY |
| Blue Diamond cholla | <i>Opuntia whipplei</i> var. <i>multigeniculata</i> | NL | CE, CY |

3 ¹ = believed extirpated from Nevada.

4 ² = designated critical habitat in Clark County, Nevada.

5 ³ = endangered only in the Virgin River; Muddy River population is a sensitive species.

6 ⁴ = listed as S3 under NRS 501.

7 NL = not listed

8 *Federal Status Notes:*

9 C = Candidate

10 E = Endangered

11 T = Threatened

12 *State Status Notes:*

13 CE = Critically Endangered

14 CY = Protected as a cactus, yucca, or evergreen tree under NRS 527.060-.120.

15 S1 = Critically imperiled and vulnerable to extinction or extirpation.

16 S2 = Imperiled due to rarity and/or other demonstrable factors

17 S3 = Vulnerable to decline or with very restricted range.

18 S4 = Apparently secure though frequently rare in parts of its range.

19 (B) = breeding occurrences only.

20 (N) = non-breeding occurrences only;

21 Sources: NDOW 2004; NRS 1979, 2007a; USFWS 2008b.

1 consists primarily of grasses and herbaceous plants, cacti, and some shrub species; small
2 amounts of insects may be included in an otherwise herbivorous diet. Threats to the
3 desert tortoise include loss of habitat to urban development and agriculture, degradation
4 of habitat by grazing and off-highway vehicle use, illegal collection, and spread of upper
5 respiratory tract infection, predation, and other human impacts.

6 FETC property contains suitable habitat for the desert tortoise. Surveys for this species
7 were conducted on 3,883 acres of FETC training lands in Sections 15, 21, and 22 during
8 Fall 1990 (USFWS 1992). The proposed project sites were surveyed during the 1990
9 desert tortoise surveys. Surveys located live tortoises, carcasses, and burrows. Critical
10 habitat for the desert tortoise was designated within Clark County by the USFWS
11 March 1994; however, FETC is not located within the area designated as critical habitat
12 (USFWS 1994).

13 4.6.5.2 Western Burrowing Owl (*Athene cunicularia*)

14 The western burrowing owl is a species native to southern Nevada which adapts well to
15 urban environments. Western burrowing owls may reside in southern Nevada only
16 during the summer or winter months, or year-round. The western burrowing owl
17 averages 9.4 inches in length and is distinguished from other small owls by bold spots
18 and bars, and relatively long, unfeathered legs (NatureServe 2008). The western
19 burrowing owl is an arid land resident that is relatively tolerant of urban development,
20 and is found in many areas of Clark County. The species adapts its hunting to take
21 advantage of the most readily available food source. Increasing human presence has
22 encouraged western burrowing owls to broaden their hunting area to disturbed areas such
23 as golf courses, airports, and vacant property lots (USFWS 2003).

24 Western burrowing owls are a former Federal *species of concern* and are a *protected*
25 *species* in Nevada (NDOW 2004, USFWS 2003). The species is also protected under the
26 MBTA, which prohibits killing or possessing the bird, and the destruction of nests with
27 eggs or young birds. The USFWS recommends that burrows or roosting sites not be
28 disturbed, when possible, and that artificial burrows be constructed nearby when
29 development activities destroy active burrows or roosting sites (Trulio 1995). The Las
30 Vegas USFWS Ecological Services Office is currently developing mitigation measures to
31 reduce disturbance to the species in conjunction with Clark County.

1 One pair of western burrowing owls was observed at FETC in July 2005 in the bank of an
2 old borrow pit. Western burrowing owls may be present at other locations, though no
3 formal surveys have been conducted at the installation (NVARNG 2006a).

4 4.6.5.3 Las Vegas Bearpoppy (*Arctomecon californica*)

5 Las Vegas bearpoppy populations in the Las Vegas Valley have been shown to be
6 genetically unique and are therefore of concern to the USFWS, the Nevada Division of
7 Forestry (NDF), and Clark County. The plant species is listed *as critically endangered*
8 by the State of Nevada (NDOW 2004) and is known to occur only in Clark County,
9 Nevada and Mohave County, Arizona (Nevada Natural Heritage Program [NNHP] 2001).

10 The Las Vegas bearpoppy is a short-lived herbaceous plant with showy yellow flowers
11 which bloom in April and May. Habitat consists of dry or powdery dissected or
12 hummocked soils high in gypsum content. It is often found in soils with a well-
13 developed crust, in areas of generally low relief and sparse vegetative cover (NNHP
14 2001).

15 Based on prior habitat surveys at FETC and nearby Nellis AFB, required habitat for the
16 Las Vegas bearpoppy is not likely present at the installation. Surveys for the Las Vegas
17 bearpoppy were conducted at the same time as the 1990 desert tortoise surveys (see
18 Section 4.6.5.1 above). Surveys focused on identifying the presence of suitable habitat
19 for the species; however, required gypsum soil deposit habitat was not observed at FETC
20 (NVARNG 2006b). The presence of isolated populations of Las Vegas bearpoppy at
21 FETC cannot be ruled out, however, without more detailed surveys.

22 4.6.5.4 Las Vegas Buckwheat (*Eriogonum corymbosum var. nilsil*)

23 Las Vegas buckwheat is a long-lived shrub believed to be unique to Clark County,
24 though scattered populations may also occur in the state of Utah. The shrub is typically 1
25 to 4 feet tall, with oval leaves distinguished by sparse silvery tufts of cobwebby hairs at
26 the branching points on flowering branches and on the upper surface of leaves (NNHP
27 2001). Flowers are small and yellow to whitish in color; they occur in several heads per
28 plant and bloom from August through November.

29 The species is listed as *threatened* by the State of Nevada (NDOW 2004). This species
30 occupies similar habitats as the Las Vegas bearpoppy, primarily on or near gypsum soils
31 in areas of generally low relief, or gentle washes and drainages (NNHP 2001).

1 Based on prior habitat surveys, required habitat for the Las Vegas buckwheat is not likely
2 present at the installation; gypsum soil deposit habitat was not observed at FETC during
3 previous surveys (NVARNG 2006b). However, as described for the Las Vegas
4 bearpoppy, there may be occurrences of the species at the installation (NVARNG 2006b).

5 4.6.5.5 Nevada Protected Plant Species

6 All native cacti, yuccas, and evergreen trees are protected and regulated by the State of
7 Nevada under Nevada Revised Statute (NRS) 527.060-.120 (NRS 1979). This provision
8 prohibits removal or destruction of the listed plant species on Nevada state lands, county
9 lands, reserved or unreserved lands owned by the Federal government, or from privately
10 owned lands without written permission, permit, and/or tag issued by the NDF. Several
11 cacti and yucca species occur at FETC, and may occur at the proposed project sites.

12 **4.6.6 Noxious Weeds**

13 Under NRS 555.005, noxious weeds are defined as: "... any species of plant which is, or
14 is likely to be, detrimental or destructive and difficult to control or eradicate" (NRS
15 1999). When introduced to an area, noxious weeds often dominate the landscape within a
16 short amount of time. The weeds may also proliferate to the point where they crowd out
17 other plants beneficial to wildlife and domestic animals (BLM 2008).

18 Under NRS 555.150, all landowners, whether private, city, county, or Federal are given
19 direction to cut, destroy, or eradicate all weeds declared and designated as noxious by the
20 State (NRS 1997). The Nevada Department of Agriculture maintains a list of state-
21 designated noxious weeds. In accordance with this policy, the BLM requires a noxious
22 weed survey to be completed prior to construction activities (BLM 2008).

23 Noxious weed surveys were conducted in 2001 at the Northern Las Vegas Beltway
24 Borrow Pit project site, located adjacent to the proposed project sites at FETC
25 (NVARNG 2006b). No state-designated noxious weeds were identified in the survey.
26 During the 16 October 2008 site visit, no noxious weeds were observed at or near the
27 proposed project sites. However, no comprehensive noxious weed surveys have been
28 conducted at the proposed project sites.

1 **4.7 CULTURAL RESOURCES**

2 **4.7.1 Regulatory Overview**

3 Cultural Resources are defined as historic properties as defined by NHPA, cultural items
4 as defined by NAGPRA, archeological resources as defined by Archeological Resources
5 Protection Act, sacred sites as defined in EO 13007 to which access is afforded under
6 AIRFA, and collections and associated records as defined in 36 CFR 79.

7 In addition to standard Federal regulations regarding cultural resources, the *Department*
8 *of Defense Annotated American Indian and Alaska Native Policy* (October 27, 1999), a
9 component of DoD policy 14710.02, governs DoD interactions with federally-recognized
10 tribes. The policy outlines DoD trust obligations, communication procedures with tribes
11 on a government-to-government basis, consultation protocols, and actions to recognize
12 and respect the significance that tribes ascribe to certain natural resources and properties
13 of traditional cultural or religious importance. The policy requires consultation with
14 federally recognized tribes for proposed activities that could significantly affect tribal
15 resources or interests.

16 In addition to Federal and State regulatory laws and policies, an Installation Cultural
17 Resources Management Plan (ICRMP) is required by DoD Instruction (DODI) 4715.3,
18 *Environmental Conservation Program*, and DA PAM 200-4, *Cultural Resources*
19 *Management*. The NVARNG operates under a waiver from the NGB for this
20 requirement and does not operate under an established ICRMP. This waiver is valid
21 through 2010, and the NVARNG is in the process of providing additional information in
22 order to receive another variance

23 **4.7.2 Investigations of the Project Site**

24 To determine whether the project site contains previously recorded cultural resources, a
25 records search was conducted on 10 March 2009 using the Nevada Historical Resources
26 Information System website; <http://www.gnomon.com/webgis/>. The search included
27 files at the center that contain known and recorded archaeological and historic sites,
28 inventory and excavation reports filed with the Nevada SHPO.

29 Results of the records search show that archeological surveys have been conducted on
30 FETC in 1980, 1986, and 1987 (SWCA 1991). These three surveys encompassed the
31 entire installation. No prehistoric sites exist, but one historic site was found. The Lovell
32 Siding site; 26 CK 5685 is recorded as a historic campsite or station associated with the

1 railroad construction. Due to vandalism and subsequent railroad construction, 95% of the
2 site has been destroyed. The site is located within the UPRR easement. This site is not
3 considered eligible for inclusion to the NRHP.

4 One federally recognized tribe was identified by the Nevada SHPO as potentially having
5 an interest in the project area: the Las Vegas Tribe of Paiute Indians of the Las Vegas
6 Indian Colony. This tribe was contacted by the NVARNG to initiate government-to-
7 government consultations by postal mail regarding the project (Appendix A). Any
8 responses or comments received from the Tribe will be included in Appendix A.

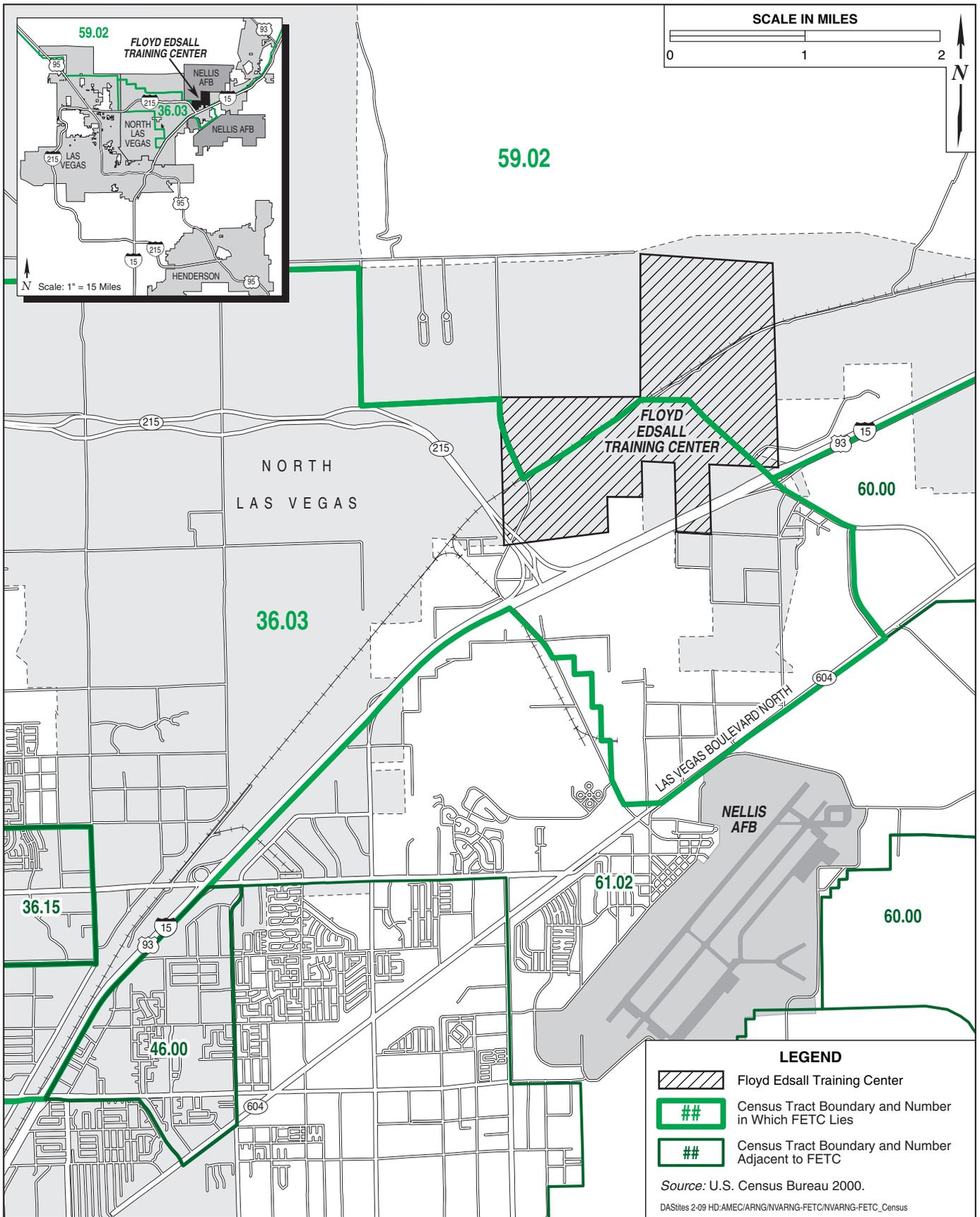
9 The NVARNG submitted the results of the records search and Native American
10 consultation information to the State Historic Preservation Office (SHPO) on (to be
11 submitted) asking for the determination of “No Historic Properties Affected” by the
12 proposed undertaking (Appendix A). NVARNG is awaiting the SHPO’s concurrence
13 regarding the proposed undertaking.

14 **4.8 SOCIOECONOMICS**

15 This section describes the socioeconomic setting for the area immediately surrounding
16 FETC by utilizing U.S. Census Bureau census tract and other data. Figure 4-6 shows the
17 location of the installation in relation to surrounding census tracts. Due to the location of
18 the FETC within the Las Vegas Valley, the socioeconomic resources of the City of North
19 Las Vegas and Clark County may be discussed where adequate data for nearby census
20 tracts is not available, or when additional information on surrounding communities may
21 better describe the socioeconomic conditions of the area.

22 **4.8.1 Population**

23 According to the 2000 Census, the total population of the four census tracts immediately
24 surrounding FETC totaled 15,718 (U.S. Census Bureau 2000). More recent population
25 estimates for these census tracts are not available. However, to illustrate the rapid
26 population growth in the area, the population of the City of North Las Vegas, in which
27 the installation is located, roughly doubled (53.7 percent) from 115,488 in 2000 to an
28 estimated 215,026 in 2007 (Clark County 2007; U.S. Census Bureau 2000). According
29 to the U.S. Census Bureau, North Las Vegas had the nation’s fastest growth rate among
30 large cities (100,000 or greater population) between 2005 and 2006, increasing 11.9
31 percent during that period (U.S. Census Bureau 2007). By 2030, the city is expected to
32 have a population of approximately 566,605 (City of North Las Vegas 2008a).



EA

Census Tracts in the Vicinity of Floyd Edsall Training Center

FIGURE 4-6



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

1 **4.8.2 Employment**

2 Employment sectors providing the greatest number of jobs in the four census tracts
 3 immediately surrounding FETC include *accommodation and food services; arts,*
 4 *entertainment, and recreation; construction; health care and social assistance; retail*
 5 *trade; and, transportation and warehousing.* These sectors provide jobs for more than 60
 6 percent of the area’s workforce, which totaled 8,017 as of 2000 (U.S. Census Bureau
 7 2000). The top employers for the surrounding census tracts are not available; however,
 8 top employers for the City of North Las Vegas and Clark County are presented in Table
 9 4-9. Employment sectors providing the greatest number of jobs in North Las Vegas are
 10 similar to those in the census tracts immediately surrounding the installation.

11 **Table 4-9. Major Employers in North Las Vegas and Clark County, Nevada**

| North Las Vegas (2007) ¹ | | Clark County (2008) ² | |
|---|-----------|----------------------------------|-----------|
| Name | Employees | Employer | Employees |
| City of North Las Vegas | 2,156 | Clark County School District | 38,237 |
| Marmaxx Distribution Center | 1,709 | Clark County | 10,453 |
| Aggregate Industries | 1,700 | Venetian Hotel & Resorts | 9,800 |
| Mission Industries | 1,450 | Bellagio Hotel & Casino | 9,521 |
| Veolia Transportation (ATC/Vancom of Nevada) | 1,267 | MGM Grand Hotel & Casino | 9,521 |
| Texas Station Gambling Hall & Casino | 1,137 | Wynn Las Vegas | 9,300 |
| Cannery Casino-Hotel | 1,102 | Mandalay Bay Resort & Casino | 7,396 |
| Pete King Nevada Corp. | 1,101 | Caesars Palace Hotel & Casino | 6,400 |
| Las Vegas Paving Company | 1,100 | Mirage Hotel & Casino | 5,710 |
| Pratte Building Systems | 1,100 | Las Vegas Metropolitan Police | 5,507 |

12 ¹ Annual 2007 data.

13 ² First quarter 2008 data only.

14 Sources: Clark County 2008b; City of North Las Vegas 2008a.

15 At the time of the 2000 census, the workforce in the four census tracts surrounding FETC
 16 totaled 8,017, with 412 persons, or 5.1 percent unemployed. Unemployment rates in the
 17 census tracts ranged from 0.0 to 9.4 percent (Table 4-10) (U.S. Census Bureau 2000).
 18 According to the City of North Las Vegas *Comprehensive Annual Financial Report,*
 19 *the2007 unemployment rate for North Las Vegas was 4.7 percent (City of North Las*
 20 *Vegas 2007b).* This is similar to the 2007 unemployment rate for Clark County, in which
 21 the labor force totaled 907,717 with unemployment at 45,927, or 4.8 percent (Nevada
 22 Department of Employment, Training, and Rehabilitation 2008).

1 **Table 4-10. Workforce and Unemployment in Census Tracts Surrounding FETC**

| Employment Characteristics | Census Tract Number | | | | Total |
|----------------------------|---------------------|-------|-------|-------|-------|
| | 36.03 | 59.02 | 60 | 61.02 | |
| Workforce | 109 | 641 | 5,319 | 1,948 | 8,017 |
| Unemployed | 0 | 41 | 187 | 184 | 412 |
| Unemployment Rate (%) | 0.0 | 6.4 | 3.5 | 9.4 | 5.1 |

2 Source: U.S. Census Bureau 2000.

3 **4.8.3 Housing Supply**

4 Table 4-11 presents housing characteristics for the four census tracts surrounding FETC
 5 for the year 2000; more recent data are not available. The total vacancy rate for all four
 6 tracts was 9.3 percent, with an average of 2.96 persons per housing unit (U.S. Census
 7 Bureau 2000). For comparison, housing characteristics in the City of North Las Vegas
 8 are presented in Table 4-12. The number of housing units in North Las Vegas increased
 9 substantially from 2000 to 2006, by over 27,000 units, or approximately 57 percent.
 10 Vacancy rates also increased during the same period, from 7.1 in 2000 to 9.2 percent in
 11 2006. However, persons per housing unit declined slightly, from 2.63 in 2000 to 2.46 in
 12 2006 (U.S. Census Bureau 2000, 2006).

13 **Table 4-11. Housing Characteristics for Census Tracts Surrounding FETC (2000)**

| Housing Characteristics | Census Tract Number | | | | Total for All Tracts |
|-------------------------|---------------------|-------|-------|-------|----------------------|
| | 36.03 | 59.02 | 60 | 61.02 | |
| Vacant Units | 5 | 79 | 294 | 109 | 487 |
| Total Units | 67 | 570 | 3,173 | 1,437 | 5,247 |
| Vacancy Rate (%) | 7.5 | 13.9 | 9.3 | 7.6 | 9.3 |
| Persons Per Unit | 2.84 | 3.11 | 2.91 | 2.98 | 2.96 |

14 Source: U.S. Census Bureau 2000.

15 **Table 4-12. City of North Las Vegas Housing Characteristics**

| Housing Characteristics | Year | |
|-------------------------|--------|--------|
| | 2000 | 2006 |
| Vacant Units | 2,582 | 5,865 |
| Total Units | 36,600 | 63,946 |
| Vacancy Rate (%) | 7.1 | 9.2 |
| Persons Per Unit | 2.63 | 2.46 |

16 Source: U.S. Census Bureau 2000, 2006.

1 **4.8.4 Schools**

2 Areas surrounding FETC and the City of North Las Vegas are served by the Clark
3 County School District (CCSD). CCSD is the fifth largest in the nation, with more than
4 300 schools serving over 250,000 students. In addition, at least 38 private and charter
5 schools serve southern Nevada and Clark County (City of North Las Vegas 2006c).
6 According to 2000 census data, 3,071 children were enrolled in kindergarten through
7 twelfth grade in the four census tracts immediately surrounding the installation (U.S.
8 Census Bureau 2000). As of 2006, an estimated 43,415 children were enrolled in
9 kindergarten through twelfth grade in North Las Vegas. Several public and private post-
10 secondary educational institutions are also located in North Las Vegas, and a proposed
11 expansion of the University of Nevada, Las Vegas would be located in the city. Three
12 schools are located in the vicinity of FETC: Dickens Elementary, located approximately
13 2.5 miles southwest; Johnston Middle School, located approximately 3.5 miles west; and,
14 Mojave High School, located approximately 6 miles southwest (CCSD 2008).

15 **4.8.5 Shops and Services**

16 Several small strip malls are located along East Craig Road and North Las Vegas
17 Boulevard, approximately 4 miles south of FETC. In addition, numerous restaurants,
18 fast-food operations, and commercial and retail shops are located within several small
19 strip malls adjacent to Nellis AFB. The Las Vegas Motor Speedway and a large
20 automobile auction lot are also located near the installation, east of I-15.

21 **4.8.6 Recreation**

22 Clark County has 70 parks and recreational facilities; the county parks located closest to
23 FETC are Alexander Villas (approximately 4 miles southwest), West Flamingo Park and
24 Center (approximately 4.2 miles southwest), and Nellis Meadows Park (approximately
25 4.5 miles south) (Clark County 2008c). The City of North Las Vegas manages several
26 large community parks; however, none are located within 5 miles of the installation. The
27 Las Vegas Dunes National Recreation Area, also known as Nellis Dunes, is located
28 approximately 4 miles east of FETC. The recreational area consists of approximately
29 10,000 acres and is used primarily by off-road vehicles to explore desert sand dunes.

30 **4.8.7 Energy Consumption**

31 The availability of electricity and other energy resources is vital to livelihood of
32 socioeconomic activity. Because demand for electricity and other energy resources will

1 undoubtedly continue to increase along with population growth, the State of Nevada has
2 established requirements for the use of renewable energy resources for electricity
3 supplies. By 2015, at least 20 percent of electricity sold to consumers in Nevada must be
4 generated from renewable energy resources (NRS 2007b).

5 NV Energy supplies a majority of the electricity to the Las Vegas metropolitan area,
6 including FETC. The company promotes the research, development, and consumer use
7 of renewable energy sources through its *Green Power Program* (NV Energy 2008). As
8 part of this program, NV Energy enters into power purchase agreements (PPAs) with
9 private utility developers to install and integrate renewable energy projects into the
10 company's power grid. NV Energy also encourages individual consumers to install
11 renewable energy resources such as solar photovoltaic panels. Through the *Green Power*
12 *Program*, NV Energy is actively working to meet state regulatory goals for the use of
13 renewable energy sources.

14 **4.9 ENVIRONMENTAL JUSTICE**

15 In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority*
16 *Populations and Low-Income Populations*, was issued to focus attention of Federal
17 agencies on human health and environmental conditions in minority populations and in
18 low-income communities. In addition, its purpose is to ensure that disproportionately
19 high and adverse human health or environmental effects on these communities are
20 identified and addressed. Similar to Section 4.8, *Socioeconomics*, this section describes
21 minority, low-income, and children populations in the U.S. Census tracts immediately
22 surrounding FETC and, where relevant, the City of North Las Vegas and Clark County
23 (see Figure 4-6 in Section 4.8, *Socioeconomics*).

24 **4.9.1 Minority and Low-Income Populations**

25 4.9.1.1 Minority Populations

26 Table 4-13 presents a comparison of population percentages by race between the census
27 tracts immediately surrounding FETC, the City of North Las Vegas, and Clark County
28 (U.S. Census Bureau 2000). The area around the installation has lower percentages of
29 *African American* and *Hispanic/Latino* populations than North Las Vegas or Clark
30 County. Percentages for remaining minority populations are greater near FETC than in
31 North Las Vegas and Clark County; however, the percentage of *Native Hawaiian and*
32 *other Pacific Islander* population is similar for all three locations.

1 **Table 4-13. Population Percentages by Race (2000)**

| Race | Census Tracts ¹ | | North Las Vegas | | Clark County | |
|--|----------------------------|------------------|-----------------|------------------|--------------|------------------|
| | Population | Percent of Total | Population | Percent of Total | Population | Percent of Total |
| White | 9,342 | 59.4 | 31,888 | 41.8 | 828,669 | 60.2 |
| African American | 1,980 | 12.6 | 13,806 | 18.1 | 121,401 | 8.8 |
| American Indian and Alaska Native | 290 | 1.9 | 383 | 0.5 | 7,761 | 0.6 |
| Asian | 647 | 4.1 | 2,811 | 3.7 | 71,226 | 5.2 |
| Native Hawaiian and Other Pacific Islander | 93 | 0.6 | 369 | 0.4 | 5,864 | 0.4 |
| Other or Multiracial | 593 | 3.8 | 1,396 | 1.8 | 38,701 | 2.8 |
| Hispanic/Latino | 2,773 | 17.6 | 25,645 | 33.6 | 302,143 | 22.0 |

2 ¹ Includes Census Tracts 36.03, 59.02, 60 and 61.02, which surround the installation.
 3 Source: U.S. Census Bureau 2000.

4 **4.9.1.2 Low-Income Populations**

5 According to the 2000 Census, 10.7 percent of the population in the census tracts
 6 immediately surrounding FETC was living below the poverty level. This is similar to
 7 Clark County (10.8 percent) and the State of Nevada (10.5 percent). By comparison, the
 8 percentage of individuals living below the poverty level was greater in the City of North
 9 Las Vegas (14.8 percent) and for the nation (12.4 percent) (U.S. Census Bureau 2000).
 10 More recent poverty level estimates are not available for the census tracts nearby the
 11 installation; however, 2006 estimates are available for nearby locations. North Las Vegas
 12 experienced a decrease in percentage of the population living below the poverty level,
 13 from 14.8 percent to 10.6 percent. Estimates for other areas are similar to 2000 values –
 14 Clark County (10.8 percent), Nevada (10.3 percent) – while the U.S. poverty level
 15 slightly increased (13.3 percent) (U.S. Census Bureau 2006).

16 Per capita income for the year 2000 in the census tracts surrounding FETC ranged from
 17 \$13,521 to \$16,492 (Table 4-14). This is comparable to North Las Vegas (\$16,063);
 18 however, this range is significantly less than the per capita income for Clark County
 19 (\$21,785), Nevada (\$21,989), and the U.S. (\$21,587) (U.S. Census Bureau 2000).

1 **Table 4-14. Per Capita Income at Local, City, County, State, and National Levels**

| FETC Vicinity | | Comparison Locations | |
|---------------|-------------------|----------------------|-------------------|
| Census Tract | Per Capita Income | Area | Per Capita Income |
| 36.03 | \$15,863 | North Las Vegas | \$16,063 |
| 59.02 | \$16,492 | Clark County | \$21,785 |
| 60 | \$13,521 | State of Nevada | \$21,989 |
| 61.02 | \$14,626 | United States | \$21,587 |

2 Source: U.S. Census Bureau 2000.

3 **4.9.1.3 Additional Populations of Consideration**

4 Temporary occupation by vagrant populations may occasionally occur in the eastern
 5 portion of FETC property. The population is not authorized to access or occupy
 6 installation property; however, there are currently no security measures (e.g., fencing) to
 7 prevent this population from occupying the area. No vagrant populations were observed
 8 during site inspection on 16 October 2008 and installation personnel indicate that none
 9 have been recently observed.

10 **4.9.2 Protection of Children from Environmental Health and Safety Risks**

11 Because children may suffer disproportionately from environmental health risks and
 12 safety risks, EO 13045, *Protection of Children from Environmental Health and Safety*
 13 *Risks*, was introduced in 1997 to prioritize the identification and assessment of
 14 environmental health and safety risks which may affect children, and to ensure that
 15 Federal agencies' policies, programs, activities, and standards address environmental
 16 health risks and safety risks to children.

17 **4.9.2.1 Age Distribution**

18 Table 4-15 compares the age distributions of the census tracts surrounding FETC, the
 19 City of North Las Vegas, Clark County, and the State of Nevada using information from
 20 the 2000 census. The area surrounding the installation has a greater percentage of
 21 children in every age category than North Las Vegas, Clark County, and the State of
 22 Nevada (U.S. Census Bureau 2000). For comparison, Table 4-16 presents estimated age
 23 distributions of North Las Vegas, Clark County, and the State of Nevada for 2006.
 24 Estimates for 2006 are not available for the census tracts near the installation.

1 **Table 4-15. Age Distribution Information (2000)**

| Age Group (years) | Census Tracts ¹ | | North Las Vegas | | Clark County | | State of Nevada | |
|-------------------|----------------------------|-----------------------|-----------------|-----------------------|--------------|-----------------------|-----------------|-----------------------|
| | Number | Percent of Population | Number | Percent of Population | Number | Percent of Population | Number | Percent of Population |
| Under 5 | 1,686 | 10.7 | 11,966 | 10.4 | 103,301 | 7.5 | 145,817 | 7.3 |
| 5 to 9 | 1,533 | 9.8 | 12,357 | 10.7 | 104,267 | 7.6 | 149,322 | 7.5 |
| 10 to 14 | 1,135 | 7.2 | 9,895 | 8.6 | 93,132 | 6.8 | 139,193 | 7.0 |
| 15 to 19 | 1,071 | 6.8 | 7,977 | 6.9 | 84,636 | 6.2 | 127,169 | 6.4 |

2 ¹ Includes Census Tracts 36.03, 59.02, 60 and 61.02, which surround the installation.
 3 Source: U.S. Census Bureau 2000.

4 **Table 4-16. Age Distribution Information (2006 Estimates)**

| Age Group (years) | North Las Vegas | | Clark County | | State of Nevada | |
|-------------------|-----------------|-----------------------|--------------|-----------------------|-----------------|-----------------------|
| | Number | Percent of Population | Number | Percent of Population | Number | Percent of Population |
| Under 5 | 21,635 | 11.4 | 135,756 | 7.6 | 183,437 | 7.4 |
| 5 to 9 | 17,705 | 9.3 | 125,392 | 7.1 | 169,201 | 6.8 |
| 10 to 14 | 17,764 | 9.3 | 126,493 | 7.1 | 177,454 | 7.1 |
| 15 to 19 | 12,425 | 6.5 | 109,528 | 6.2 | 163,317 | 6.5 |

5 Source: U.S. Census Bureau 2006.

6 4.9.2.2 Schools, Parks, and Other Locations Where Children May Gather

7 The closest school to FETC is Dickens Elementary, located approximately 2.5 miles to
 8 the southwest (CCSD 2008). The nearest park, Alexander Villas, is approximately 4
 9 miles southwest of the installation (Clark County 2008c). Significant numbers of
 10 children may also gather at the Las Vegas Motor Speedway, a complex comprised of
 11 multiple tracks for automobile racing, located approximately 1 mile southeast of FETC.

12 **4.10 INFRASTRUCTURE AND SAFETY**

13 This section identifies the services and public infrastructure supporting FETC, the City of
 14 North Las Vegas, and adjacent areas. In addition, this section provides a description of
 15 the existing setting regarding safety (e.g., Anti-Terrorism/Force Protection [AT/FP]
 16 standards) at the existing Readiness Center facility.

1 **4.10.1 Infrastructure**

2 4.10.1.1 Police and Fire Protection

3 Clark County Fire Department (CCFD) operates a total of 72 fire stations, seven of which
4 are located in the City of North Las Vegas (CCFD 2008a). Five stations are located
5 within 5 miles of FETC, including four North Las Vegas stations and one station located
6 in the unincorporated community of Sunrise Manor. The closest fire station, located at
7 4250 East Alexander Road in Sunrise Manor, has an average response time of 6 minutes
8 and 27 seconds (CCFD 2008b).

9 The City of North Las Vegas Police Department (NLVPD) provides police protection to
10 areas within city corporate limits. NLVPD operates two police stations, both of which
11 are located about 7 miles from the installation (City of North Las Vegas 2006d). Police
12 protection in unincorporated Clark County areas is provided by the Clark County Sheriff
13 (Clark County Sheriff's Office 2008).

14 The Readiness Center, FMS, and CSMS buildings are all equipped with fire suppression
15 sprinkler systems. The base does not host any fire protection assets or personnel.

16 4.10.1.2 Electricity

17 Electricity service for the City of North Las Vegas and FETC is provided by NV Energy.
18 Electrical power enters the installation via underground lines located along Range Road.
19 Electrical utilities at the installation were originally constructed during World War II, and
20 existing electrical power infrastructure does not capitalize on the availability and use of
21 renewable resources (NVARNG 2007a).

22 Multiple 500-kilovolt [kV] power supply lines run along the northern perimeter of FETC.
23 In addition, a 230-kV line runs southwest across center portion of the installation. The
24 lines supply power to the Las Vegas metropolitan region and are located in dedicated
25 easement areas (NVARNG 2007a).

26 4.10.1.3 Natural Gas

27 Natural gas in the City of North Las Vegas and FETC is provided by the Southwest Gas
28 Corporation via an underground line which runs along Range Road (NVARNG 2007a).

29 The Kern River Main Gas Line runs southwest across the center portion of the
30 installation through a dedicated easement area (NVARNG 2007a). The 1,680-mile
31 pipeline runs from Bakersfield, California to southwestern Wyoming and transports

1 natural gas for customers in California, Nevada, and Utah (Kern River Gas Transmission
2 Company 2008).

3 4.10.1.4 Potable Water

4 The SNWA manages water service in the Las Vegas metropolitan area through individual
5 city water agencies and county water districts. Water service in the City of North Las
6 Vegas is provided through a partnership between SNWA and the city's *Utilities/Business*
7 *Services Division* (City of North Las Vegas 2008c).

8 Potable water service at FETC is provided by the City of North Las Vegas and was
9 formerly supplied by a water well located in the southwest corner of the Cantonment
10 Area. Potable water is pumped to a water storage tower located in the northern portion of
11 the Cantonment Area,. Capacity of the storage tower is approximately 250,000-gallons
12 (NVARNG 2007a).

13 4.10.1.5 Sanitary Wastewater

14 Sanitary wastewater service in the City of Las Vegas is provided by the city's *Utilities/*
15 *Business Services Division* (City of North Las Vegas 2008c). FETC is serviced by city
16 sanitary sewer lines which were recently installed along Centennial Parkway. Existing
17 facilities at FETC are joined to the city sewer line via lateral lines (NVARNG 2007a).

18 4.10.1.6 Stormwater

19 Stormwater drainage at FETC generally flows in a southwesterly direction toward the
20 Cantonment Area, leading to ponding and flooding during heavy rain events. A series of
21 channels carry water out of the Cantonment Area to peripheral areas (NVARNG 2007a).

22 4.10.1.7 Solid Waste

23 Solid waste disposal throughout the entire Las Vegas metropolitan region is provided by
24 Republic Services. A solid waste transfer station, or temporary location for deposition of
25 waste and recyclables, is located approximately 6 miles southwest of FETC in the City of
26 North Las Vegas. The Apex Sanitary Landfill is located about 10 miles northeast of the
27 installation (Republic Services 2008).

1 4.10.1.8 Telecommunications

2 Telecommunications throughout the entire Las Vegas metropolitan region are provided
3 by Embarq Corporation and Cox Communications. Telecommunications at FETC are
4 connected via lines running along Range Road (NVARNG 2007a).

5 **4.10.2 Safety**

6 The FETC Cantonment Area is currently enclosed by a secure controlled perimeter fence.
7 This fence is constructed of concrete masonry units on its southern edge, connected
8 concrete jersey barriers along the western boundary with the POV lot, and chain-link
9 along the northern and eastern boundaries. Access to the MV parking lot is provided by
10 two rolling gates (one located at the northwest corner and one along the eastern
11 perimeter), and a walk-in gate allows personnel to enter and exit along the northern
12 perimeter (Figure 4-7). Three security cameras monitor the MV parking lot and two
13 security cameras monitor the Readiness Center. UFC 4-010-01, *DoD Minimum*
14 *Antiterrorism Standards for Buildings*, requires minimum setbacks of 148 feet (45
15 meters) for facilities within fenced areas. None of the existing Cantonment Area
16 facilities are in compliance with this standard (NVARNG 2007a).

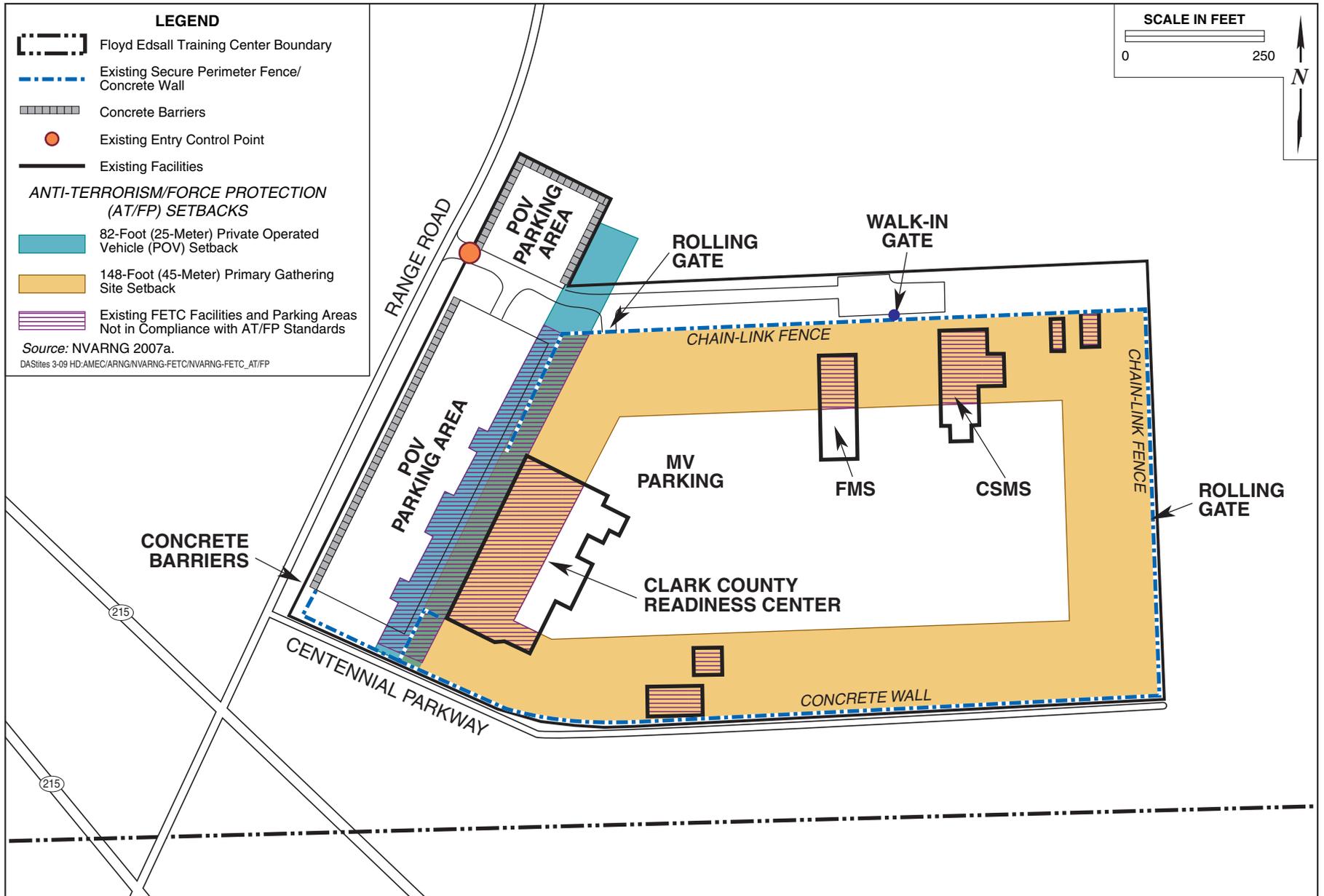
17 Access to the POV parking lot is via a high-security entry control point (ECP) located
18 along Range Road. Access is controlled by a swing gate along Range Road near the
19 northwest corner of the Cantonment Area, which is controlled by personnel within a
20 guard shack. A concrete jersey wall surrounds the POV lot on all sides.. The gate, wall,
21 and guard shack do not meet UFC 4-022-01, *Security Engineering: Entry Control*
22 *Facilities/Access Control Points*, or UFC 4-0101-01 requirements (NVARNG 2007a).

23 The existing Readiness Center building does not comply with required 82-foot (25-meter)
24 setbacks from the private operated vehicle (POV) parking lot, per UFC 4-010-4 standards
25 (NVARNG 2007a).

26 Figure 4-7 demonstrates how portions of the existing Readiness Center, Cantonment
27 Area, and associated parking areas are not in compliance with established UFC AT/FP
28 and entry control standards.



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Floyd Edsall Training Center
 Security and Anti-Terrorism/Force Protection (AT/FP) Setbacks at
 Existing Readiness Center and Cantonment Area

FIGURE
 4-7

1 **4.11 TRAFFIC AND CIRCULATION**

2 **4.11.1 Transportation Network**

3 4.11.1.1 Regional Transportation

4 North Las Vegas is located along I-15, a major north-south transportation corridor which
5 serves long-distance automobile and truck vehicle movement throughout the Western
6 Inter-Mountain region of the U.S. I-15 begins in San Diego, travels through the Inland
7 Empire and Mojave Desert regions of Southern California, proceeds north through the
8 Las Vegas metropolitan area, then continues north through Utah, Idaho, and Montana,
9 eventually terminating at the Canadian border about 150 miles south of Calgary, Alberta.
10 I-15 connects to I-40 in Southern California and I-80 in Salt Lake City, Utah; both
11 highways are major east-west transportation corridors serving the entire U.S.

12 North Las Vegas is also served by a newly-constructed portion of the Las Vegas Beltway,
13 a road which circles the perimeter of the Las Vegas metropolitan region. Portions of the
14 Beltway are constructed to American Association of State Highway and Transportation
15 Officials (AASHTO) Interstate Standards and are designated as I-215; however, the
16 portion serving North Las Vegas is not constructed to AASHTO Standards and is thus
17 designated as CC-215.

18 North Las Vegas is additionally served by Nevada State Route (SR) 604 (Las Vegas
19 Boulevard), a major urban arterial which roughly parallels I-15. SR-604 originates in the
20 southern portion of the Las Vegas metropolitan region, travels north through the City of
21 Las Vegas, and continues northeast, eventually terminating at I-15 near the
22 unincorporated community of Apex. U.S. Federal Highway (US) 93 runs concurrently
23 with I-15 through North Las Vegas; US-93 is a key north-south transportation corridor
24 which originates near Phoenix, Arizona, travels north through the Las Vegas
25 metropolitan region, the continues north through eastern Nevada, eventually terminating
26 along I-80 near the City of Elko.

27 North Las Vegas is located along a major north-south UPRR corridor which commences
28 in Southern California and eventually terminates in Salt Lake City, Utah. The corridor is
29 a key route for the transportation of manufactured goods which arrive in the Ports of Los
30 Angeles and Long Beach, as well as grains and other commodities grown in the
31 Midwestern region of the U.S. (UPRR 2007).

1 4.11.1.2 Local Transportation

2 FETC is located near the intersection of I-15/US-93 and SR-215 (Figure 4-8). I-15/US-
3 93 runs northeast to southwest along the southern perimeter of the installation, while SR-
4 215 runs east-west near the installation’s western perimeter. Range Road, a two-lane
5 north-south arterial road, runs through the western portion of FETC, and provides access
6 to the Cantonment Area and existing Readiness Center. Speedway Boulevard, a major
7 northwest-southeast arterial road, provides access to the eastern portion of FETC via an
8 interchange with I-15/US-93. Centennial Parkway, a two-lane east-west road, runs along
9 the southern perimeter of the Cantonment Area. A majority of the Parkway is unpaved
10 and closed to the public; however, it is planned as an I-15/US-93 frontage road to connect
11 SR-215 and Range Road with Speedway Boulevard (NVARNG 2007a).

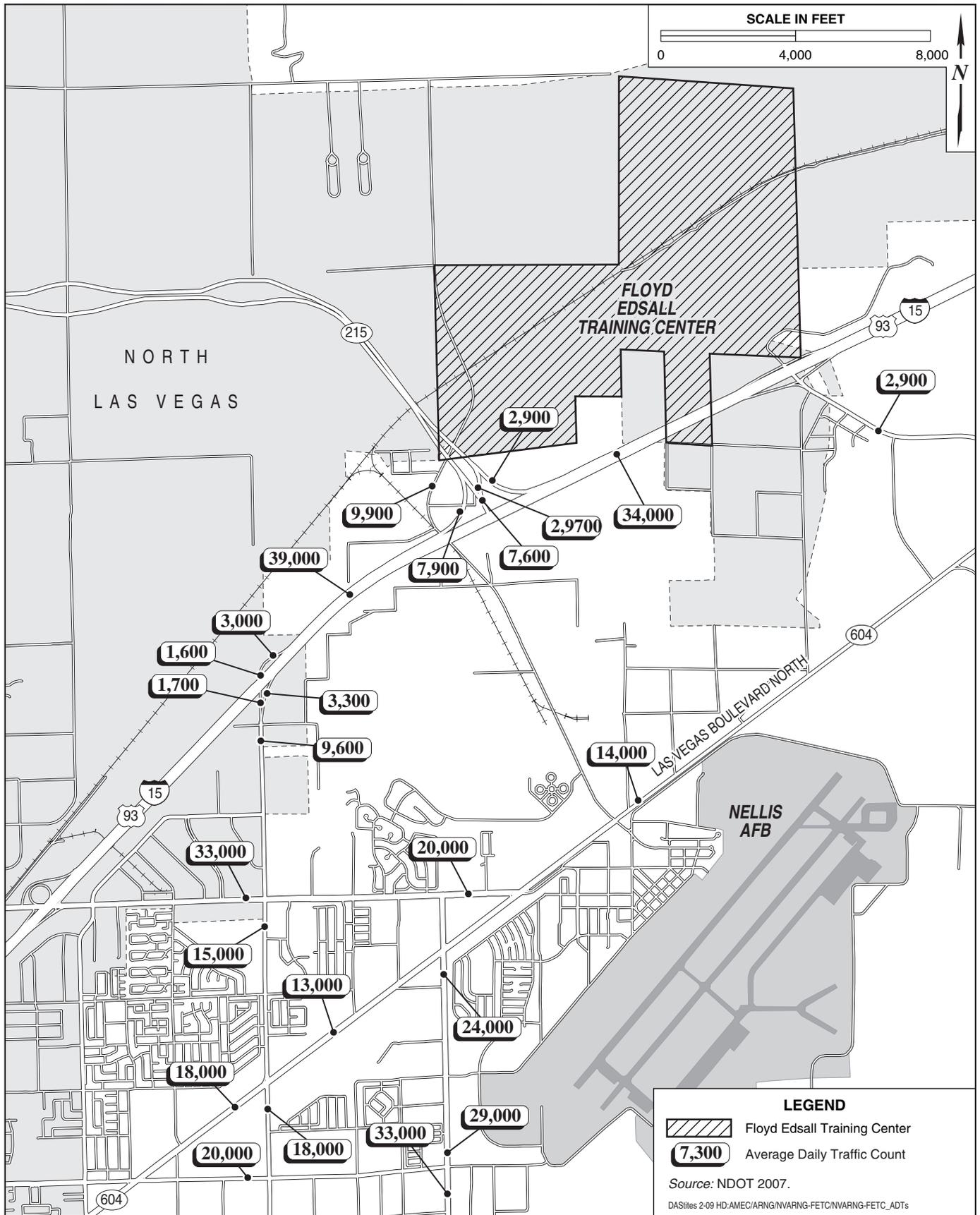
12 The UPRR corridor bisects the central portion of FETC via a 100-foot-wide easement.
13 An at-grade railroad crossing is located along Range Road (NVARNG 2007a).

14 Access, Circulation, and Parking at FETC

15 Primary access to the Cantonment Area and existing Readiness Center is via a high-
16 security ECP located along Range Road (refer to Figure 4-7). All POV and most MV
17 traffic enters through this access point. Primary access to the MV parking lot is through a
18 rolling gate on the northwest corner of the Cantonment Area. . A third gate, located on
19 the eastern perimeter of the Cantonment Area, serves as the secondary MV access point
20 (NVARNG 2007a).

21 Two primary circulation areas exist within the Cantonment Area: the POV parking lots,
22 located west of the existing Readiness Center, and the MV parking lot, located to the east.
23 Circulation between the two areas is limited to a partially paved road which runs along
24 the northern perimeter of the Cantonment Area. Pedestrian circulation is restricted to
25 parking lots and paved pathways located in the vicinity of the existing Readiness Center
26 (NVARNG 2007a).

27 A total of 389 POV parking spaces are available in two lots. The lots typically overflow
28 during IDT drill weekends; unpaved areas west of Range Road must be utilized to
29 accommodate parking for up to 800 POVs. The MV parking lot is approximately 14
30 acres and contains both designated parking spots and large unmarked paved parking areas
31 (NVARNG 2007a).



Circulation and Average Daily Traffic Counts (ADTs) in the Vicinity of Floyd Edsall Training Center

FIGURE 4-8



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

1 **4.11.2 Operating Conditions**

2 Nevada Department of Transportation (NDOT) produces an *Annual Traffic Report* which
3 studies major roads and intersections throughout the State of Nevada. Annual average
4 daily traffic (ADT) counts are collected in hourly increments at various locations
5 statewide. Traffic counts for major roadways and intersections near FETC are displayed
6 in Figure 4-8. The report does not provide information on operating conditions, peak
7 hour roadway volumes, or levels of service.

8 **4.12 HAZARDOUS AND TOXIC MATERIALS AND WASTE**

9 Hazardous materials are defined as substances with strong physical properties of
10 ignitability, corrosivity, reactivity, or toxicity which may cause an increase in mortality, a
11 serious irreversible illness, incapacitating reversible illness, or pose substantial threat to
12 human health or the environment. Hazardous wastes are defined as any solid, liquid,
13 contained gaseous, semi-solid waste, or any combination of wastes that pose a substantial
14 present or potential hazard to human health or the environment.

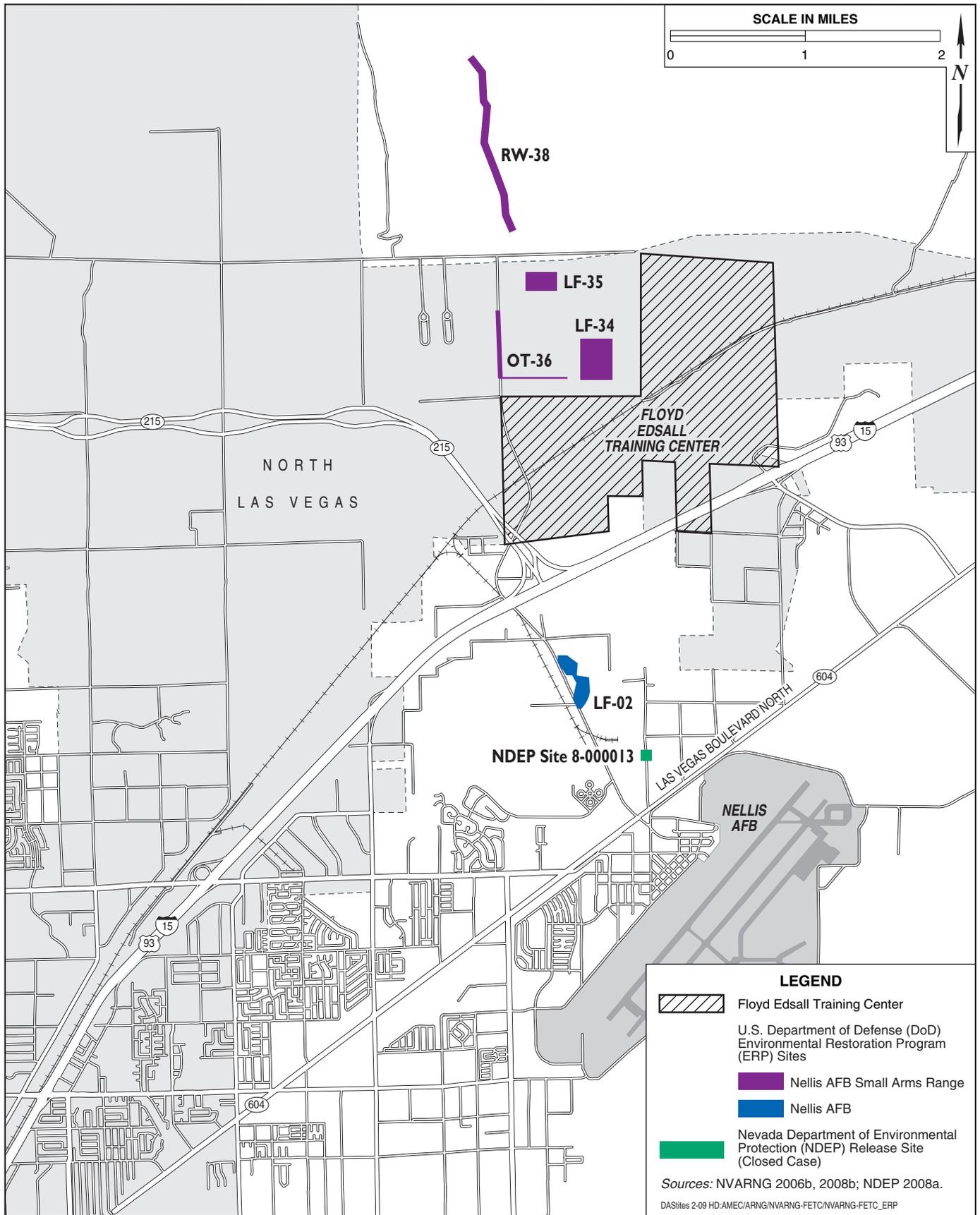
15 **4.12.1 Hazardous Material and Petroleum Product Release Sites**

16 4.12.1.1 FETC

17 A review of the USEPA and NDEP records indicates that no releases of hazardous
18 materials or waste have occurred on FETC property (NDEP 2008a, 2008b). However,
19 several sites associated with the disposal of hazardous materials and wastes are identified
20 on two adjacent properties: Nellis AFB, located south of the installation, and the Nellis
21 AFB Small Arms Range, located immediately north of FETC (NVARNG 2006a, 2007a,
22 2008b). The sites are shown on Figure 4-9 and further described below.

23 4.12.1.2 Nellis AFB

24 Nellis AFB contains one DoD Environmental Restoration Program (ERP) Site located
25 within a 2-mile radius of FETC (Figure 4-9). The site is associated with a former solid
26 waste landfill and is located downgradient from the installation (NVARNG 2006a).
27 There is no evidence that the site has affected groundwater or soils on FETC property
28 (NVARNG 2007a).



Hazardous Material and Petroleum Product Release Site in the Vicinity of Floyd Edsall Training Center

FIGURE 4-9



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

- 1 • *Landfill LF-02* consists of a 33-acre solid waste landfill used from 1958 to 1966
2 to dispose mostly of building demolition materials and paint sludge from spray
3 booths. In 1996, the site was covered with a graded and compacted native soil
4 cover. Currently, eight groundwater monitoring wells are associated with the site.
5 Annual sampling in 2005 detected polychloroethene and trichlorethene (TCE), but
6 below reportable USEPA maximum contamination levels. There is no evidence
7 that contamination has migrated to adjacent groundwater or soils. The site is
8 located downgradient from FETC, approximately 1 mile south of the installation
9 (NVARNG 2006a).

10 4.12.1.3 Nellis AFB Small Arms Range

11 The Nellis AFB Small Arms Range contains four sites associated with the disposal of
12 hazardous materials and wastes (refer to Figure 4-9). All of the sites are reported as
13 containing No Further Action (NFA) status, and no evidence suggests that hazardous
14 contaminants from any of the sites have migrated beyond Nellis AFB Small Arms Range
15 property (NVARNG 2008b). Further, two groundwater monitoring wells installed at
16 FETC in 1991 have failed to detect any contaminants in groundwater underlying the
17 installation (NVARNG 2007a).

- 18 • *Landfill LF-34* was used from 1960 to 1965 to dispose of miscellaneous shop
19 wastes associated with Nellis AFB, including solvents, paints, and lubricants.
20 Groundwater monitoring wells installed in 1992 detected low levels of TCE;
21 however, no evidence of contaminant migration has been observed, and an NFA
22 Decision Document (DD) was signed on 7 August 2007 (NVARNG 2008b).
- 23 • *Landfill LF-35* was used during the early 1970s to dispose of miscellaneous shop
24 wastes associated with Nellis AFB, including solvents, paints, and lubricants. A
25 groundwater monitoring well installed downgradient of the site failed to detect
26 any contaminants. The site is reported as NFA status (NVARNG 2008b).
- 27 • *Ordinance Disposal Area OT-36* was reportedly used for ordinance inactivation,
28 disposal, and small arms residue burning. No ordinance was found during a site
29 sweep in 1992, and nearby groundwater monitoring wells have failed to detect
30 any contaminants. The site is reported as NFA status (NVARNG 2008b).
- 31 • *Disposal Pits RW-38* consists of a series of potential radioactive hazardous waste
32 disposal pits from the 1960s. A 1992 survey failed to detect any radioactivity
33 above background levels, and an NFA DD was signed on 5 November 1993
34 (NVARNG 2008b).

35 4.12.1.4 Other Sites

36 One additional open release site was included in USEPA and NDEP records as occurring
37 within a 2-mile radius of FETC (refer to Figure 4-9). The site was classified as closed in

1 1991 and closure regarding contaminated media occurred in 1993 (NDEP 2008a). No
2 active open release sites are located within a 2-mile radius of the installation (NDEP
3 2008b).

- 4 • *NDEP Site 8-000013* – Cal Nev Pipeline Company/Texaco, 5056 North Sloan
5 Avenue – NDEP records indicate a leaky underground storage tank (LUST)
6 present at the site prior to 1991 which resulted in potential soil contamination.
7 Closure regarding the LUST occurred on 6 November 1991, while closure related
8 to potential soil contamination was completed on 14 March 1993 (NDEP 2008a).
9 The site is located approximately 1.5 miles south of FETC.

10 **4.13 SUSTAINABILITY AND GREENING**

11 Sustainable “green” building and development practices include energy efficiency, water
12 savings, materials selection, sustainable site development, and indoor environmental
13 quality. Benefits of sustainable development include lower operating costs and increased
14 asset value by reducing waste sent to landfills, energy and water conservation, providing
15 healthier and safer facilities for occupants, reducing harmful greenhouse gas emissions
16 that incrementally contribute to global climate change, and by demonstrating an owner's
17 commitment to environmental stewardship and social responsibility.

18 4.13.1.1 Existing Facilities at FETC

19 Although the existing Readiness Center was constructed in 2002, many of the facilities at
20 FETC were constructed during World War II or shortly thereafter. Sustainable and green
21 building practices and regulations were not widely implemented in past construction
22 projects at the base. None of the current facilities at the installation are constructed to
23 *Leadership in Energy and Environmental Design* (LEED) standards.

24 4.13.1.2 Existing Power Infrastructure at FETC

25 Power for FETC is currently purchased from NV Energy, which supplies the majority of
26 its energy from coal and natural gas sources. Utilities in place at FETC were originally
27 constructed during World War II, and energy infrastructure does not currently capitalize
28 on the availability of any renewable resources (NVARNG 2007a). The NVARNG is
29 currently conducting a statewide audit of energy uses and is examining the incorporation
30 of energy generated from renewable sources into its various facilities.

- 1 • **No Impact.** A project alternative with no impact will have no perceptible effect
2 on the resources in question.

3 **5.1 LAND USE AND VISUAL RESOURCES**

4 For this analysis, a project alternative would have an adverse impact on land use if it
5 were to:

- 6 • Conflict with the FETC *Site Development Master Plan* or established easements
7 at the installation; the City of North Las Vegas *Comprehensive Master Plan* or
8 other applicable zoning or land use regulations; or other policies adopted by
9 agencies with jurisdiction over the project;
- 10 • Result in a negative visual impact that would substantially degrade or obstruct a
11 scenic vista or scenic highway; or generate light, glare and visual intrusion that
12 would substantially affect other properties or open space.

13 **5.1.1 Preferred Alternative**

14 5.1.1.1 Land Use at FETC

15 Readiness Center

16 The proposed Readiness Center is documented as an anticipated NVARNG project in the
17 FETC *Master Plan*. Construction of facilities would occur on a currently vacant portion
18 of FETC which is available for development. In addition, the Readiness Center and
19 associated infrastructure have been sited to address land use adjacencies, both compatible
20 and incompatible, with other current and proposed facilities at the installation. Project
21 construction would also address current land use conflicts (e.g., parking in unauthorized
22 areas) through the establishment of adequate areas for parking, training, administrative,
23 and storage space. Consequently, any impacts related to land use at FETC would be
24 beneficial.

25 Solar Photovoltaic System

26 The SPVS would be installed on a 300-acre undeveloped site located in the northern
27 portion of FETC. The site is currently designated as a ROW associated with the
28 development of a future SNWA water line. However, the ROW is temporary and the
29 SPVS project site can be developed once a finalized SNWA water line alignment is
30 selected. Further, the SPVS is sited to be compatible with other current and proposed
31 facilities in the FETC *Master Plan*. As a result, impacts to land use at the installation are
32 expected to be less than significant.

1 5.1.1.2 Surrounding Land Use

2 Impact discussions with regard to land use in the City of North Las Vegas reflect
3 proposed land use designations outlined in the city's *Comprehensive Master Plan*. FETC
4 is located within the corporate limits of North Las Vegas and contains a land use
5 designation of Public/Semi-Public (PSP) in the *Master Plan*. The PSP designation allows
6 for the establishment of public facilities and associated infrastructure as long as they are
7 compatible with surrounding land use. Compatibility of the proposed projects at FETC
8 with surrounding land use is further analyzed below.

9 Readiness Center

10 The proposed Readiness Center would be located in the southwest portion of FETC.
11 Currently, a majority of land surrounding the project site is undeveloped. However, the
12 area is located within North Las Vegas corporate limits and contains a myriad of land use
13 designations, including *Heavy Industrial (HI)*, *Employment (E)*, *Community Commercial*
14 *(CC)*, *Resort Commercial (RC)*, and *Multi-Family Residential (MFR)*.

15 The *HI* and *E* land use designations allow for industrial uses of varying intensity (e.g.,
16 warehousing, technical laboratories, etc.). Establishment of the Readiness Center and
17 associated infrastructure is not expected to conflict with these uses. As a result, potential
18 land use impacts to parcels with *HI* or *E* designations would be less than significant.

19 The *CC*, *RC*, and *MFR* designations allow for commercial and residential uses of varying
20 intensity which may potentially conflict with the proposed Readiness Center. In addition,
21 several *RC* parcels located south of the proposed Readiness Center project site along
22 Centennial Parkway contain a *GEDO*, which would permit the development of 24-hour
23 gaming operations and associated uses (e.g., hotels, restaurants, etc.). The NVARNG is
24 working with owners of parcels containing these designations to ensure awareness of
25 potential encroachment resulting from the future development at FETC. A joint land use
26 study (JLUS) is underway between the NVARNG and affected property owners to ensure
27 encroachment awareness (NVARNG 2008c). Therefore, potential land use impacts to
28 parcels with *CC*, *RC*, or *MFR* designations and those with a *GEDO* would be less than
29 significant.

30 Establishment of the Readiness Center is not expected to impact land use associated with
31 Nellis AFB or the Nellis AFB Small Arms Range, or any land use in unincorporated
32 Clark County.

1 Solar Photovoltaic System

2 The proposed SPVS would be located in the north-central portion of FETC. Areas to the
3 west of the project site are currently undeveloped, but are designated as *MFR* by the City
4 of North Las Vegas. As noted above, the NVARNG and owners of the *MFR* parcels are
5 currently participating in a JLUS to ensure encroachment awareness (NVARNG 2008c).
6 As a result, potential land use impacts are expected to be less than significant.

7 Areas to the north and east of the proposed SPVS project site are located within the Nellis
8 AFB Small Arms Range. Installation of the SPVS is not expected to conflict with range
9 activities; therefore, impacts to land use would be less than significant.

10 Installation of the SPVS is not expected to impact land use at Nellis AFB or areas located
11 within unincorporated Clark County.

12 5.1.1.3 Visual Resources

13 Readiness Center

14 No designated scenic vistas or highways exist in the vicinity of the proposed Readiness
15 Center; therefore, construction of the proposed facilities would not impact views of such
16 resources. In addition, the Readiness Center would be designed to conform to regional
17 architectural influences and existing buildings at FETC. Lighting associated with the
18 proposed facilities would face downward to minimize glare and would conform to any
19 applicable City of North Las Vegas lighting regulations. Accordingly, impacts to visual
20 resources resulting from establishment of the Readiness Center are expected to be less
21 than significant.

22 Solar Photovoltaic System

23 The proposed SPVS is not expected to impact scenic vistas or highways. Reflectivity
24 from the SPVS array could potentially be visible from CC-215; however, most of the
25 road is at an equivalent elevation with the project site, which would limit the extent of
26 such views. Other elevated viewing areas surrounding the FETC are used by Nellis AFB
27 and the Nellis AFB Small Arms Range, which prohibit public entry. Any lighting
28 associated with the SPVS would conform to applicable City of North Las Vegas lighting
29 regulations. Consequently, impacts to visual resources resulting from installation of the
30 SPVS would be less than significant.

1 **5.1.2 No Solar Component Alternative**

2 Under the No Solar Component Alternative, the proposed Readiness Center and
3 associated infrastructure would be constructed, but installation of the SPVS would not
4 occur. Impacts to land use at FETC and surrounding areas would remain the same as the
5 Preferred Alternative, less than significant. Impacts to visual resources would also
6 remain the same the Preferred Alternative, less than significant.

7 **5.1.3 No-Action Alternative**

8 If the No-Action Alternative was selected, the NVARNG would not implement the
9 Proposed Action. Land use and visual resources would remain as described under
10 baseline conditions and no impacts would occur.

11 **5.2 AIR QUALITY**

12 For this analysis, adverse air quality effects would be defined as violating or contributing
13 to the violation of any federal, state, or local air quality standard; exposing sensitive
14 receptors to airborne pollutants; altering air movement, moisture, temperature, or climate;
15 or creating objectionable odors.

16 **5.2.1 Preferred Alternative**

17 Activities associated with the Preferred Alternative, including grading, construction, and
18 operations, would not result in significant air quality impacts. There could be an increase
19 in vehicle emissions associated with the travel of construction employees to and from the
20 workplace, but these impacts would be minimal and not cause significant impacts.

21 Construction activities, such as grading and trenching, would cause a temporary increase
22 in PM₁₀ emissions. Emissions of CO, NO_x, and VOCs would be produced in exhaust
23 from both on-site construction equipment and workers' vehicles traveling to and from the
24 work site. Appendix B presents details on the air emission calculations used in this
25 analysis. All emissions calculations were completed using a worst case scenario and
26 included no natural mitigation measures (e.g., climatic conditions). Emissions from
27 construction of the Readiness Center and SPVS construction are shown in Table 5-1.

1 **Table 5-1. Emissions of Criteria Pollutants from Construction of Readiness Center**
 2 **and SPVS (tons per year)**

| Component | PM ₁₀ | CO | NO _x | VOC | SO ₂ |
|---|------------------|--------|-----------------|-------|-----------------|
| Readiness Center | 3.04 | 7.31 | 15.89 | 1.09 | 1.85 |
| SPVS | 0.48 | 3.19 | 9.60 | 1.05 | 1.01 |
| Total | 3.52 | 10.50 | 25.49 | 2.14 | 2.86 |
| <i>de minimis</i> threshold | 70 | 100 | 100 | 100 | N/A |
| Total Emissions for Clark County ¹ | 4,843 | 17,466 | 40,703 | 1,670 | 43,267 |

3 Note: Construction would occur over two years, from 2010 through 2011. PM₁₀ emissions include combustion and
 4 fugitive dust emissions. Includes emissions from worker commuting.

5 ¹Source: USAF 2006, Clark County 2005 (major sources)

6 Emissions associated with construction of the new facilities and infrastructure
 7 improvements include fugitive dust (PM₁₀) from site disturbance and vehicle exhaust
 8 from construction equipment and worker commutes. Dust-generating construction
 9 activities could include vegetation removal, grading, and demolition. PM₁₀ emissions can
 10 vary substantially on a daily basis depending on levels of activity, specific operations,
 11 and prevailing meteorological conditions.

12 Increased PM₁₀ emissions resulting from proposed construction activities would comprise
 13 short-term adverse impacts that would be reduced by implementing the mandatory Dust
 14 Control Permit, which requires a Dust Mitigation Plan (Clark County, Air Quality
 15 Regulations, Section 94.2.1) through DAQEM. In addition, the Dust Control Permit
 16 would be made part of the specifications of the construction contract between the owner
 17 and prime contractor as well as contracts between the prime contractor and applicable
 18 subcontractors (Section 94.6.5). Regular watering of disturbed ground, along with
 19 implementation of standard best management practices (BMPs) can reduce fugitive dust
 20 emissions up to 75% (USEPA 1995). Standard BMPs for dust minimization include:

- 21 • Minimizing the area disturbed by clearing, earthmoving, or excavating;
- 22 • Sufficiently watering all excavated or graded areas to prevent excessive dust
 23 generations;
- 24 • Limiting construction vehicle speeds on unpaved surfaces at the construction site;
- 25 • Watering or chemically treating unpaved active portions of the construction site to
 26 minimize windblown dust and dust generated by vehicle traffic;
- 27 • Sweeping paved portions of the construction site to control windblown dust and
 28 dust generated by vehicle traffic; and
- 29 • Re-vegetating and landscaping as soon as possible after disturbing the soil.

1 With the implementation of the above BMPs and any additional measures required by the
2 Dust Control Permit, dust emissions during construction would be less than significant.
3 Following completion of initial site preparation and grading activities, dust emissions
4 from construction would significantly diminish.

5 Combustion emissions associated with construction-related vehicles and equipment
6 would be minimal because most vehicles would be driven to and kept at the affected site
7 for the duration of construction activities. Further, as is the case with PM₁₀ emissions
8 associated with site preparation activities, emissions generated by construction equipment
9 would be temporary and short-term.

10 The increase in emissions from the Preferred Alternative is considered minimal when
11 compared to the total emissions from major sources in Clark County in 2005. The
12 emissions associated with the Preferred Alternative would increase countywide emissions
13 by less than 1 percent annually and would not hinder maintenance of the NAAQS within
14 the region of influence. As a result, no significant impacts to air quality would occur
15 from construction or operational activities associated with the Preferred Alternative.

16 However, because the FETC is in a non-attainment area for PM₁₀, CO, and ozone, a
17 General Conformity applicability analysis was conducted for the Preferred Alternative.
18 Based on the *serious* non-attainment status for CO and PM₁₀, the *de minimis* threshold is
19 70 tons per year for PM₁₀ and 100 tons per year for CO, and 100 tons per year for ozone
20 precursors (VOC and NO_x). As shown in Table 5-1, emissions generated by the
21 Preferred Alternative would not exceed *de minimis* thresholds. In addition, these
22 emissions would not exceed 10 percent of the Clark County air emission inventory for
23 these pollutants, would not be regionally significant, and would not require a General
24 Conformity Determination.

25 5.2.1.1 Operational Emissions

26 Readiness Center

27 Operational emissions from the proposed Readiness Center would include emissions
28 from the six permanent administrative personnel's POVs commuting to and from the
29 FETC and the use of boilers for heating and hot water for the proposed facility
30 (Table 5-2). Since the 100th QMC and 240th ENC would only convene periodically for
31 training exercises, emissions from POVs belonging to these units would not occur on a
32 regular basis. Emissions from emergency diesel generator re-fueling and half-hour
33

1
2
3

Table 5-2. Emissions of Criteria Pollutants from Operation of Readiness Center (tons per year)

| Component | PM ₁₀ | CO | NO _x | VOC | SO _x |
|---|------------------|--------|-----------------|-------|-----------------|
| Commuters | 0.00 | 0.31 | 0.03 | 0.05 | 0.00 |
| Boilers | 0.16 | 1.80 | 1.07 | 0.12 | 0.01 |
| Total | 0.16 | 2.12 | 1.10 | 0.16 | 0.01 |
| <i>de minimis</i> threshold | 70 | 100 | 100 | 100 | N/A |
| Total Emissions for Clark County ¹ | 4,843 | 17,466 | 40,703 | 1,670 | 43,267 |

4 Note: Assumes six full-time regular commuters and worst-case scenario involving use of 5 boilers in operation 24
5 hours/day, 365 days/yr to provide heating and hot water to proposed Readiness Center.
6 ¹Source: USAF 2006, USEPA 1995, Clark County 2005 (major sources)

7 monthly testing of the generators would add incrementally to air pollutant emissions, but
8 would have a less than significant impact. Emissions from training activities would also
9 be less than significant, as training exercises for the 100th QMC would be conducted off-
10 site; and training for the 240th ENC would be infrequent and limited in size and scope.

11 Solar Photovoltaic System

12 Maintenance of the SPVS would require periodic vehicle trips to the array to clean the
13 solar panels and repair faults. During these trips, PM₁₀ emissions would increase due to
14 vehicle transit on unimproved dirt roads. Watering of the area around the SPVS could
15 reduce PM₁₀ generated during windy days, as well as PM₁₀ generated from the operation
16 of maintenance vehicles. These vehicle trips could potentially be reduced through the
17 installation of an automated panel cleaning system. In addition, operation of the SPVS
18 would have an overall beneficial impact on air quality, as the FETC would reduce its
19 consumption of non-renewable energy, thereby reducing the amount of air pollutants
20 indirectly created when generating electricity from a non-renewable source.

21 **5.2.2 No Solar Component Alternative**

22 Under the No Solar Component Alternative, the proposed Readiness Center and
23 associated infrastructure would be constructed, but installation of the SPVS would not
24 occur. Impacts to air quality at the Readiness Center project site would be the same as
25 the Preferred Alternative, less than significant. With regard to the proposed SPVS
26 project site, air quality would remain the same as described under baseline conditions.
27 The purchase of renewable energy would still result in beneficial impacts to air quality.

1 **5.2.3 No-Action Alternative**

2 Under the No-Action Alternative the proposed facilities and SPVS would not be
3 constructed. Therefore, there would be no additional air quality impacts; however,
4 without the beneficial impacts resulting from use of renewable energy would not occur.

5 **5.3 NOISE**

6 Noise impact analyses typically evaluate potential changes to existing noise environments
7 that are instigated by implementation of a project alternative. Changes may be significant
8 if they result in increased exposure to unacceptable noise levels. An increase in noise
9 levels due to introduction of a new noise source can create an impact on the surrounding
10 environment. Significance thresholds for noise involving non-transportation criteria are
11 illustrated in Figure 5-1.

12 **5.3.1 Preferred Alternative**

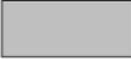
13 5.3.1.1 Construction Noise

14 Readiness Center

15 Construction of the proposed Readiness Center would have minor, temporary effects on
16 the noise environment in the vicinity of the proposed construction activities. Typical noise
17 levels for standard construction activities are shown in Table 5-3. Although the typical
18 construction noise levels listed in Table 5-3 would exceed the U.S. Department of
19 Housing and Urban Development (HUD) guidelines for *normally acceptable* noise levels
20 for sensitive receptors, no sensitive receptors are located immediately adjacent to the
21 proposed project location; the nearest sensitive noise receptors are residences located
22 approximately 0.75 miles west of the proposed project site.

23 Further, all construction equipment would be fitted with factory-installed muffling
24 devices and maintained to prevent undue generation of noise, and construction activities
25 would be conducted during normal working hours (i.e., between 9 AM and 5 PM).
26 Therefore, short-term construction-related noise impacts would be less than significant.

Figure 5-1. Recommended Land Use Based on Noise Levels

| LAND USE CATEGORY | L _{dn} VALUES (In dBA) | | | | | | | | KEY | |
|---|---------------------------------|----|----|----|----|----|----|----|-----|---|
| | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | | |
| RESIDENTIAL – SINGLE FAMILY, DUPLEX, MOBILE HOMES | | | | | | | | | |  Clearly Acceptable  Normally Acceptable  Normally Unacceptable  Clearly Unacceptable |
| RESIDENTIAL – MULTIPLE FAMILY, DORMITORIES | | | | | | | | | | |
| TRANSIENT LODGING | | | | | | | | | | |
| SCHOOL CLASSROOMS, LIBRARIES, CHURCHES | | | | | | | | | | |
| HOSPITALS, NURSING HOMES | | | | | | | | | | |
| AUDITORIUMS, CONCERT HALLS, MUSIC SHELLS | | | | | | | | | | |
| SPORTS ARENAS, OUTDOOR SPECTATOR SPORTS | | | | | | | | | | |
| PLAYGROUNDS, NEIGHBORHOOD PARKS | | | | | | | | | | |
| GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES | | | | | | | | | | |
| OFFICE BUILDINGS | | | | | | | | | | |
| COMMERCIAL – RETAIL, MOVIE THEATERS, RESTAURANTS | | | | | | | | | | |
| COMMERCIAL – WHOLESALE, SOME RETAIL, INDUSTRIAL, MANUFACTURING, UTILITIES | | | | | | | | | | |
| MANUFACTURING, COMMUNICATION (NOISE SENSITIVE) | | | | | | | | | | |
| LIVESTOCK FARMING, ANIMAL BREEDING | | | | | | | | | | |
| AGRICULTURAL (EXCEPT LIVESTOCK), MINING, FISHING | | | | | | | | | | |
| PUBLIC RIGHT-OF-WAY | | | | | | | | | | |
| EXTENSIVE NATURAL RECREATION AREAS | | | | | | | | | | |

Source: U.S. Department of Housing and Urban Development 1991.

1 **Table 5-3. Typical Commercial Construction Noise Levels**

| Phase | Noise Level (L _{eq}) ¹ |
|--------------------|---|
| Ground Clearing | 84 |
| Excavation | 89 |
| Foundations | 78 |
| Erection | 85 |
| Exterior Finishing | 89 |
| Pile Driving | 90-105 |

2 ¹ Estimates correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase and
3 200 feet from the other equipment associated with that phase.
4 Source: USEPA 1971.

5 Solar Photovoltaic System

6 Installation of the proposed SPVS would result in minor, temporary effects on the noise
7 environment similar to those associated with construction of the proposed Readiness
8 Center. However, the nearest sensitive noise receptors are residences located
9 approximately 0.75 miles west of the proposed SPVS project site, and similar noise
10 reduction measures (i.e., use of equipment with noise muffling devices, limited
11 construction activities to normal working hours, etc.) would be incorporated into SPVS
12 installation activities. Therefore, short-term noise impacts would be less than significant.

13 5.3.1.2 Operational Noise

14 Readiness Center

15 The proposed Readiness Center would be constructed in a noise environment dominated
16 by large trucks and other vehicle traffic from nearby I-15 and CC-215, as well as ambient
17 noise from air traffic activity associated with Nellis AFB. Proposed facilities would be
18 sited in areas that have a noise exposure of less than 75 DNL; HUD considers such
19 facilities compatible in this environment (HUD 1991). Operation of the proposed
20 Readiness Center would not comprise a generator of noise. In addition, training activities
21 associated with the new units proposed to be housed at the Readiness Center would be
22 infrequent and would not constitute the addition of a new long-term noise source;
23 therefore, noise associated with training activities would be consistent with the existing
24 noise environment at FETC. Accordingly, operational noise related to the proposed
25 Readiness Center would not be significant.

1 Solar Photovoltaic System

2 Operation of the proposed SPVS would include regular maintenance and cleaning.
3 Cleaning activities, required to remove excess dust from the arrays to maintain efficiency,
4 would be conducted periodically by the private utility developer. These activities would
5 be infrequent in nature and would not be considered a significant noise generator.
6 Similarly, any additional maintenance activities associated with the SPVS would also be
7 infrequent and would not result in significant generation of noise. Therefore, operational
8 noise related to the proposed SPVS would not be significant.

9 **5.3.2 No Solar Component Alternative**

10 Under the No Solar Component Alternative, the proposed Readiness Center and
11 associated infrastructure would be constructed, but installation of the SPVS would not
12 occur. Although this alternative would not include construction noise related to
13 installation of the SPVS, noise impacts would remain similar as described under the
14 Preferred Alternative. Short-term construction noise would not exceed significance
15 thresholds at nearby sensitive receptors. Further, construction would occur during
16 normal business hours and all standard noise reduction measures (i.e., use of equipment
17 with noise muffling devices) would be implemented. Therefore, short-term impacts to
18 the noise environment under this alternative would be less than significant. Once
19 operational activities began, impacts would be the same as the Preferred Alternative, not
20 significant.

21 **5.3.3 No-Action Alternative**

22 If the No-Action Alternative was selected, the NVARNG would not implement the
23 Proposed Action. No short- or long-term impacts to the noise environment would occur,
24 and conditions would remain as described in Section 4.3.

25 **5.4 GEOLOGY AND SOILS**

26 Significant impacts on geology and soil could result if the proposed project increases the
27 likelihood of or results in exposure to substantial earthquake damage, slope failure,
28 foundation instability, land subsidence, severe erosion or sedimentation, or other severe
29 geologic hazards. Significant impacts also could occur if the proposed project results in
30 the loss of soil used for agriculture or habitat, the loss of the aesthetic value of a unique
31 landform or the loss of mineral resources.

1 **5.4.1 Preferred Alternative**

2 5.4.1.1 Geology

3 Readiness Center

4 No unique geological features have been identified at the proposed Readiness Center
5 project site. Potential geologic impacts associated with proposed construction activities
6 would be limited to ground-disturbing activities (i.e., site preparation and construction).
7 Minor impacts would result from proposed construction activities; however, the majority
8 of construction activities would occur on previously disturbed land that is capable of
9 supporting such development. Proposed construction activities would be localized, and
10 would not have a significant impact on sensitive or regional geologic or physiographic
11 features. No significant impacts to geology are expected to occur due to operation of the
12 Readiness Center. Consequently, geologic impacts resulting from construction and
13 operation of the proposed Readiness Center would be less than significant.

14 Solar Photovoltaic System

15 The 300-acre proposed SPVS project site does not contain any unique geological
16 features. Potential geologic impacts associated with construction of the proposed SPVS
17 would be limited to ground-disturbing activities during site preparation and construction.
18 Minor impacts would result from proposed construction activities (e.g., excavation for
19 footings of solar arrays); however, proposed construction activities would be localized,
20 and would not have significant impacts on sensitive or regional geologic or physiographic
21 features. Operation of the proposed SPVS is not expected to result in any significant
22 geologic impacts. Therefore, impacts to geology occurring as a result of construction and
23 operation of the SPVS are expected to be less than significant.

24 5.4.1.2 Soils

25 Readiness Center

26 Construction of the proposed Readiness Center would involve the grading and alteration
27 of present surface topography, including soils. However, no unique soils have been
28 identified at the proposed Readiness Center project site, and the majority of construction
29 activities would occur on previously disturbed land. In addition, soils at the project site
30 are identified as having low erosion hazard. Any potential erosion due to construction
31 and operation of the proposed Readiness Center would be addressed through preparation
32 of a *Storm Water Pollution Prevention Plan* (SWPPP) which would specify erosion

1 control and post-construction best management practices (BMPs). No significant impacts
2 to soils are expected to result from operation of the Readiness Center. Therefore, any
3 impacts to soils or soil productivity resulting from construction and operation of the
4 proposed Readiness Center are expected to be less than significant.

5 Solar Photovoltaic System

6 Construction of the proposed SPVS would result in ground disturbance associated with
7 excavation for solar array footings and trenching for electrical conduit. Such activities
8 would temporarily alter soil profiles; however, no unique soils have been identified at the
9 300-acre SPVS project site. Soils at the project site are identified as having low erosion
10 hazard; any potential erosion due to construction and operation of the proposed SPVS
11 would be addressed through implementation of a SWPPP. Once operational, the SPVS is
12 not expected to result in any impacts to soils. As a result, any impacts to soils or soil
13 productivity due to construction and operation of the proposed SPVS would be less than
14 significant.

15 5.4.1.3 Potential Geologic Hazards

16 Readiness Center

17 Although no active faults are mapped through FETC, the potential exists for significant
18 shaking from nearby and distant earthquake sources, including the Las Vegas Valley
19 Shear Zone, located immediately south of the installation. To minimize impacts resulting
20 from earthquakes, the proposed Readiness Center would be constructed in accordance
21 with building codes which address adverse effects on structures due to ground shaking
22 from earthquakes. Consequently, any potential earthquake-related impacts would be
23 reduced to less than significant levels.

24 Soils at the proposed Readiness Center project site are rated as having low shrink-swell
25 potential and are not considered expansive. Impacts due to expansive soils are therefore
26 expected to be less than significant.

27 Solar Photovoltaic System

28 The proposed SPVS would be constructed according to building codes which address
29 adverse effects on structures due to ground shaking from earthquakes; therefore, any
30 potential impacts resulting from earthquakes would be less than significant.

1 Soils at the proposed SPVS project site are rated as having low shrink-swell potential are
2 not considered expansive; consequently, impacts due to expansive soils are expected to
3 be less than significant.

4 **5.4.2 No Solar Component Alternative**

5 Under the No Solar Component Alternative, the proposed Readiness Center and
6 associated infrastructure would be constructed, but installation of the SPVS would not
7 occur. Impacts to geology and soils at the Readiness Center project site would be the
8 same as the Preferred Alternative, less than significant. With regard to the proposed
9 SPVS project site, geology and soils would remain the same as described under baseline
10 conditions.

11 **5.4.3 No-Action Alternative**

12 If the No-Action Alternative was selected, the NVARNG would not implement the
13 Proposed Action. Geology and soils would remain the same as described in Section 4.4.

14 **5.5 WATER RESOURCES**

15 For this analysis, adverse impacts to water resources would occur if:

- 16 • a project alternative would expose people or property to water-related hazards,
17 including flooding or altered drainage patterns;
- 18 • a project alternative would alter surface water quality or quantify; or,
- 19 • a project alternative would alter groundwater quality or quantity.

20 **5.5.1 Preferred Alternative**

21 5.5.1.1 Surface Water

22 Readiness Center

23 The land that would contain the proposed Readiness Center does not include any surface
24 water resources, such as ephemeral drainages. Stormwater runoff generated during
25 construction and operation of the new facility would drain into a series of channels which
26 would carry the water to peripheral areas. The NVARNG would be required to comply
27 with a NPDES general construction activity permit issued by the NDEP, under Section
28 402 of the CWA. Additionally, a SWPPP would be developed and implemented as part
29 of the permit requirements to achieve compliance with the State of Nevada's General
30 Stormwater Permit. Compliance with the NPDES permit and implementation of the

1 SWPPP would reduce potential impacts to surface water resources to less than significant
2 levels.

3 New hazardous materials and waste storage areas are planned as part of the proposed
4 Readiness Center. The proposed controlled waste handling facility and flammable
5 materials storage area would provide containment in the event of an accidental spill or
6 leak to prevent potential runoff into nearby surface waters. Further, a *Spill Prevention,*
7 *Control, and Countermeasures Plan* (SPCCP) would be developed and implemented to
8 avoid and minimize any impacts resulting from an accidental spill or leak. Accordingly,
9 construction and operation of the proposed Readiness Center would have a less than
10 significant impact on surface water resources.

11 Solar Photovoltaic System

12 Portions of the proposed SPVS would be installed within close proximity of several
13 unnamed ephemeral drainages (Figure 5-2). However, portions of these drainages have
14 been previously modified to divert surface water runoff at the installation along the
15 railway in a westerly direction to areas off FETC property. The railway also serves as a
16 partial barrier to divert surface water runoff from northern areas of the installation to the
17 west off FETC property. As part of the proposed SPVS installation, earthen berms to
18 divert upland runoff would be constructed along the northern perimeter of the SPVS
19 project site.

20 Existing and proposed diversion structures (e.g., railway, berms, existing ephemeral
21 drainages) would serve to reduce upland runoff entering the SPVS installation area.

22 Construction of the proposed SPVS would be required to comply with a NPDES permit,
23 and a SWPPP would be developed as part of permitting requirements. Any hazardous
24 materials and waste associated with operation of the SPVS would be subject to spill
25 avoidance and countermeasures outlined in the SPCCP. As a result, construction and
26 operation of the proposed SPVS is expected to have a less than significant impact on
27 surface water resources.

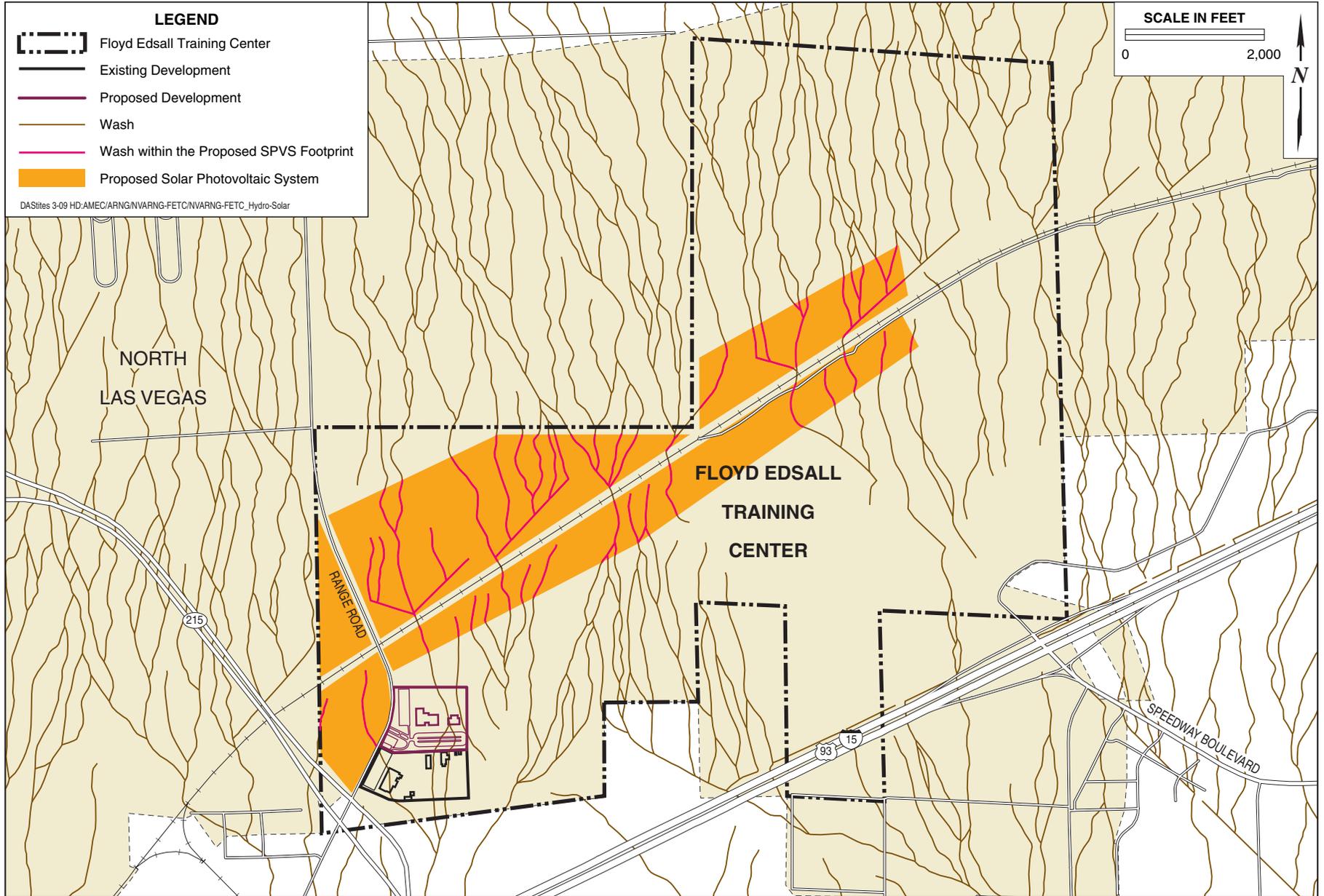
28 5.5.1.2 Groundwater

29 Readiness Center

30 Construction of the proposed Readiness Center and associated pavement areas for
31 parking would result in the establishment of approximately 333,843 sf (7.66 acres) of



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.



EA

Ephemeral Drainages in the Vicinity of the Proposed Solar Photovoltaic System at the Floyd Edsall Training Center

FIGURE 5-2

1 new impermeable surface area. Increased impermeable surfaces would potentially reduce
2 local groundwater recharge capabilities; however, additional runoff captured by nearby
3 ephemeral drainages in the area would largely offset any potential groundwater impacts.
4 Depth to groundwater in the vicinity of the Readiness Center project site is approximately
5 75 feet below ground surface (bgs); as a result, no groundwater is expected to be
6 encountered during construction excavation activities. Consequently, construction of the
7 Readiness Center would have a less than significant impact on groundwater resources.

8 Operation of the proposed Readiness Center would include the establishment of standard
9 stormwater BMPs (e.g., proper vehicle maintenance, parking of vehicles on paved areas,
10 etc.) to prevent potential contaminants from entering on-site stormwater drainage and
11 impacting nearby groundwater quality. In addition, new hazardous materials and waste
12 storage areas would be subject to spill avoidance and countermeasures outlined in the
13 SPCCP, thereby reducing potential impacts to groundwater. With the incorporation of
14 stormwater BMPs and establishment of the SPCCP, operation of the Readiness Center
15 would have a less than significant impact on groundwater resources.

16 Solar Photovoltaic System

17 Construction of the proposed SPVS would result in the establishment of new
18 impermeable surface area as a result of installation of concrete footing pads. Any
19 potential reduction in local groundwater recharge capabilities would be largely offset by
20 additional runoff captured from nearby ephemeral drainages in the area. Depth to
21 groundwater in the vicinity of the SPVS project site averages approximately 225 to 250
22 feet bgs; therefore, no groundwater is expected to be encountered during construction
23 excavation activities. Operation of the SPVS would include the establishment of
24 standard stormwater BMPs and would be subject to spill avoidance and countermeasures
25 outlined in the SPCCP. Consequently, construction and operation of the SPVS would
26 have a less than significant impact on groundwater resources.

27 5.5.1.3 Floodplains

28 Readiness Center

29 FEMA maps indicate that the proposed Readiness Center project site is not located within
30 any 100-year or 500-year flood zones. Therefore, the Readiness Center would not impact
31 or be impacted by any floodplains.

1 Solar Photovoltaic System

2 FEMA maps indicate that no portion of the 300-acre SPVS project site is located within
3 any 100-year or 500-year flood zones. As a result, the proposed SPVS would not impact
4 or be impacted by any floodplains.

5 5.5.1.4 Wetlands

6 Readiness Center

7 There are no jurisdictional wetlands located within the proposed Readiness Center project
8 site; therefore, no impacts to wetlands are expected to result.

9 Solar Photovoltaic System

10 No portion of the 300-acre SPVS project site contains jurisdictional wetlands; therefore,
11 no impacts to wetlands would result.

12 **5.5.2 No Solar Component Alternative**

13 Under the No Solar Component Alternative, the proposed Readiness Center and
14 associated infrastructure would be constructed, but the SPVS would not be installed.
15 Impacts to surface water and groundwater resources would be the same as the Preferred
16 Alternative, less than significant. Similar to the Preferred Alternative, the No Solar
17 Component Alternative would not impact or be impacted by any floodplains, and no
18 impacts to wetlands would result.

19 **5.5.3 No-Action Alternative**

20 If the No-Action Alternative was selected, the NVARNG would not implement the
21 Proposed Action. Water resources would remain the same as described in Section 4.5.

22 **5.6 BIOLOGICAL RESOURCES**

23 This section describes the potential impacts on the biological resources presented in
24 Section 4.6. Impacts are considered significant if they meet one or more of the following
25 criteria:

- 26 • Result in the direct mortality of species considered threatened, endangered,
27 proposed, or candidate, according to the federal Endangered Species Act (ESA) or
28 state listings, or of those considered federal or state species of concern, or of those
29 protected under the Migratory Bird Treaty Act (MBTA);
- 30 • Contribute to further endangerment of listed species; or,

- 1 • Substantially affect normal ecological activities, such as breeding and foraging
2 behavior.

3 Other factors for determining impacts include: (a) the degree to which the site would be
4 altered, (b) the possibility that sensitive or significant resources exist in the vicinity of the
5 project site or rely on the habitat found there during any part of their lifecycle, (c) the
6 duration of ecological affects, and (d) the degree to which the resources would be
7 impacted by a project alternative.

8 Violation of any of the following federal and state regulations would also be considered a
9 significant impact:

- 10 • Federal ESA
11 • Federal CWA
12 • MBTA
13 • Nevada Revised Statute (NRS) 47, *Protection and Preservation of Timbered*
14 *Lands, Trees, and Flora*

15 **5.6.1 Preferred Alternative**

16 5.6.1.1 Vegetation

17 Readiness Center

18 The proposed Readiness Center would be located on an approximately 7.66-acre area of
19 lightly disturbed, low-diversity desert scrubland. Vegetation at the project site is sparse,
20 characterized by widely-spaced shrubs, and has not been identified as critical habitat for
21 any species. During the construction phase, all access and staging activities would take
22 place at the project site and none are expected to disturb vegetation on adjacent areas.
23 Operation of the Readiness Center is also not expected to disturb vegetation adjacent to
24 the project site. Therefore, no significant impacts to vegetation are expected to result
25 from the proposed Readiness Center.

26 Solar Photovoltaic System

27 The proposed SPVS would be installed on a 300-acre area of low-diversity desert
28 scrubland which is lightly to moderately disturbed from on-going training operations.
29 During the construction phase, a staging area consisting of a permanent awning structure
30 would be established within the 300-acre project area. In addition, minor grading and
31 trenching would occur throughout the 300-acre SPVS installation area. Individual solar

1 arrays would be spaced approximately 30 feet apart, allowing vegetation to exist between
2 arrays. During operation of the SPVS, vegetation between individual solar arrays would
3 be trimmed, if necessary, to prevent shading of the arrays. However, on-site vegetation
4 would not be expected to grow tall enough to require trimming. No significant impacts to
5 vegetation are anticipated to result from the proposed SPVS.

6 5.6.1.2 Sensitive Habitats

7 Readiness Center

8 According to information from the USFWS wetland inventory and the USNRCS soil
9 survey, no sensitive habitats – including wetlands, agricultural lands, or designated
10 natural communities – are present at the Readiness Center project site. Therefore, no
11 significant impacts to sensitive habitats are anticipated to result from the proposed
12 Readiness Center.

13 Solar Photovoltaic System

14 According to information from the USFWS wetland inventory and the USNRCS soil
15 survey, no sensitive habitats – including wetlands, agricultural lands, or designated
16 natural communities – are present at the SPVS project site. Therefore, no significant
17 impacts to sensitive habitats are anticipated to result from the proposed SPVS.

18 5.6.1.3 Wildlife

19 Readiness Center

20 As described in Section 4.6, a number of wildlife species which have adapted to the
21 human-influenced landscape have been observed foraging and passing through FETC
22 property. Construction of the proposed Readiness Center could potentially impact
23 wildlife in the vicinity of the project site through temporary disturbance (e.g., increased
24 dust, noise and traffic) during construction activities. However, these impacts would be
25 short-term, and any species disturbed would be able to forage and travel away from the
26 area of impact. Further, current conditions of the project site are relatively noisy as a
27 result of FETC training operations, Nellis AFB, the Las Vegas Motor Speedway, and
28 adjacent roadways; noise temporarily generated from construction activities would not
29 significantly add to existing noise levels. Therefore, no significant impacts to wildlife are
30 expected to result from construction of the proposed Readiness Center.

1 Following construction, the perimeter of the Readiness Center would be completely
2 fenced. Fencing would preclude larger wildlife species from crossing the fence line;
3 however, smaller wildlife species, burrowing species, and those species capable of flight
4 would not necessarily be prevented from traversing the fence line. Such species would
5 continue to use habitat areas which may be present within the Readiness Center complex
6 following construction. Current wildlife density is low throughout the project site, and
7 surrounding lands have similar conditions due to disturbance from on-going training
8 activities. Wildlife species potentially disturbed from Readiness Center operations would
9 be able to find similar habitat on adjacent lands. Therefore, operation of the proposed
10 Readiness Center is not anticipated to have significant impacts on wildlife.

11 Solar Photovoltaic System

12 Similar to the Readiness Center, construction of the proposed SPVS could potentially
13 impact wildlife in the vicinity of the project site through temporary disturbance (e.g.,
14 increased dust, noise and traffic) during construction activities. However, these impacts
15 would be short-term and would not result in significant impacts to wildlife. Operation of
16 the proposed SPVS would include fencing which would preclude larger wildlife from
17 crossing the fence line. However, only a low occurrence of larger wildlife exists in the
18 vicinity of the proposed SPVS. Impacts to smaller wildlife species, burrowing species,
19 and those species capable of flight would be similar to those associated with the proposed
20 Readiness Center, less than significant.

21 5.6.1.4 Threatened and Endangered Species

22 Management of threatened and endangered species at FETC is conducted within the
23 framework of the ESA under guidance by the USFWS and the BLM. Suitable habitat for
24 two special-status species is present at FETC at or near the proposed project sites, and
25 suitable habitat for two special-status plant species may also be present. The following
26 paragraphs address surveying and other BMPs which would be incorporated into the
27 Preferred Alternative to address potential impacts to these species, as well as State of
28 Nevada protected plant species which may be present at the proposed project sites.

29 *Desert Tortoise*

30 FETC is not located within designated critical habitat for the desert tortoise (USFWS
31 1994); however, activities at the installation are subject to the terms and conditions of a
32 USFWS Biological Opinion (BO) dated 8 July 1992 (USFWS 1992). The BO requires
33 payment of mitigation fees for permanently or temporarily disturbing tortoise habitat.

1 Such fees are payable to the Desert Tortoise Habitat Conservation Fund, administered by
2 Clark County. Mitigation fees are used by Clark County for desert tortoise conservation
3 measures including securing tortoise habitat, habitat enhancement, and tortoise research.
4 Under the USFWS BO, NVARNG would pay mitigation fees for potential incidental take
5 of desert tortoise occurring from Preferred Alternative activities on FETC property while
6 the private utility developer would be responsible to pay fees for potential incidental take
7 occurring from activities on the SPVS parcel. In addition, instances of incidental take of
8 tortoises would be reported to USFWS Las Vegas Office.

9 *Western Burrowing Owl*

10 One pair of western burrowing owls was observed at FETC in July 2005, and more may
11 be present at other locations (NVARNG 2006b). Surveys to determine the distribution of
12 burrowing owls in the vicinity of the proposed project sites would be conducted prior to
13 implementation of the Preferred Alternative. If construction activities are planned within
14 200 feet of a known nest location during the breeding season (mid-March through
15 August), the nest site would be evaluated for breeding status and avoided until young
16 owls are no longer present.

17 *Las Vegas Bearpoppy and Las Vegas Buckwheat*

18 Surveys conducted in 1990 did not identify the presence of suitable habitat (i.e., gypsum
19 soils deposits) for these two species at FETC (NVARNG 2006b); however, suitable
20 habitat may exist at the installation and one or both of the species may be present at or in
21 the vicinity of the proposed project sites. Prior to implementation of the Preferred
22 Alternative, surveys would be conducted to determine the presence of suitable habitat and
23 potential locations of these two species in order to identify any mission conflicts or
24 management opportunities for these two species.

25 *Nevada Protected Species*

26 Several cacti and yucca species protected under NRS 527.060-.120 occur within FETC
27 property. Prior to implementation of the Preferred Alternative, the proposed project sites
28 would be surveyed for any protected cacti and yucca species; should they be found at the
29 sites, written permission for removal would be obtained from the Nevada Division of
30 Forestry (NDF) as described in Section 4.6.5.5, *Nevada Protected Plant Species*.

1 Readiness Center

2 Incorporation of surveying and other BMPs outlined above would reduce any potential
3 impacts to special status species resulting from construction and operation of the
4 proposed Readiness Center to less than significant levels.

5 Solar Photovoltaic System

6 Incorporation of surveying and other BMPs outlined above would reduce any potential
7 impacts to special status species resulting from construction and operation of the
8 proposed SPVS to less than significant levels.

9 5.6.1.5 Noxious Weeds

10 Readiness Center

11 Transportation and/or introduction of noxious weeds are not anticipated to occur at the
12 proposed Readiness Center project site. In accordance with NRS 555.150 and the BLM,
13 a noxious weed survey would be completed prior to construction activities. In addition,
14 appropriate controls (e.g., construction BMPs) would be implemented to monitor and
15 reduce the risk of noxious weeds at the site. Therefore, implementation of the Preferred
16 Alternative is not anticipated to introduce or increase noxious weeds at the Readiness
17 Center project site.

18 Solar Photovoltaic System

19 Similar to the Readiness Center, the proposed SPVS project site would be surveyed for
20 noxious weeds prior to commencement of construction activities, and appropriate
21 controls would be implemented to monitor and reduce the risk of noxious weeds at the
22 site. Therefore, implementation of the Preferred Alternative is not anticipated to
23 introduce or increase noxious weeds at the SPVS project site.

24 **5.6.2 No Solar Component Alternative**

25 Under the No Solar Component Alternative, the proposed Readiness Center and
26 associated infrastructure would be constructed, but the SPVS would not be installed.
27 Impacts to wildlife, sensitive habitats, and vegetation would be the same as the Preferred
28 Alternative, less than significant. Similar to the Preferred Alternative, the No Solar
29 Component Alternative would incorporate surveying and other BMPs to address potential
30 impacts to special-status species, thereby reducing any impacts to less than significant
31 levels. Additionally, noxious weed surveying and appropriate control techniques would

1 be incorporated into the No Solar Component Alternative, thereby reducing potential
2 impacts due to noxious weeds to less than significant levels.

3 **5.6.3 No-Action Alternative**

4 Under the No Action Alternative, the NVARNG would not implement the Proposed
5 Action; site conditions would remain the same, and no changes to existing vegetation,
6 wildlife, or habitats would occur. Selection of the No Action Alternative would result in
7 no impacts to biological resources.

8 **5.7 CULTURAL RESOURCES**

9 For this analysis, an adverse impact on cultural resources would occur if implementing a
10 project alternative were to result in an adverse change in the integrity of a significant
11 historical resource, in disruption of a prehistoric, historic, or archaeological site, or in
12 conflict with unique ethnic cultural values or religious or sacred uses within the potential
13 impact area.

14 **5.7.1 Preferred Alternative**

15 Readiness Center

16 Cultural resources investigations have occurred within the proposed project area and
17 archaeological sites have been recorded within ¼-mile of the proposed project area.
18 Results of the records search show that the entire FETC has undergone cultural resources
19 investigations including the proposed project area. No prehistoric cultural resources were
20 encountered. Archeological surveys have been conducted on FETC in 1980, 1986, and
21 1987 (SWCA 1991). These three surveys encompassed the entire installation. No historic
22 resources have been identified in the vicinity of the proposed Readiness Center project
23 site. No sacred sites have been identified on the property.

24 Because the project is considered an “Undertaking”, as defined by Section 106 of the
25 NHPA, the NVARNG has initiated consultation with SHPO. Any responses or
26 comments received from SHPO will be included in Appendix A.

27 Additionally, in accordance with Section 106 of NHPA and the DoD Annotated
28 American Indian and Alaska Native Policy, the NVARNG has initiated formal
29 consultation with one federally-recognized Native American tribe with possible interest
30 in the project area. The Las Vegas Tribe of Paiute Indians of the Las Vegas Indian
31 Colony has been invited to comment on the Draft EA (Appendix A). The NVARNG

1 does not believe that the proposed action would have the potential to significantly affect
2 protected tribal resources, sacred sites, tribal rights, or Indian lands. Any responses or
3 comments received from the Tribe will be included in Appendix A..

4 Although no surface indications of cultural resources were found, and the site is
5 considered of low sensitivity for cultural resources, previously unknown cultural
6 resources could exist within the project area. In accordance with NAGPRA and to avoid
7 impacts to any potential cultural resources, the NVARNG would implement the
8 following BMPs:

- 9 • Construction staff shall be briefed on procedures for handling the unexpected
10 discovery of archeological resources and human remains prior to undertaking
11 project activities.
- 12 • In the unlikely event that cultural resources were encountered within the project
13 area during ground-disturbing activities, all work in the area of the find would
14 stop until a qualified archaeologist has documented and evaluated the resource for
15 eligibility for the NRHP, in compliance with Section 106 of the NHPA.
- 16 • In the event that human remains were discovered, all work in the area would stop
17 and the Clark County Coroner would be notified immediately. If the remains
18 were determined to be Native American, then the Native American tribes with
19 interest in the area will be notified within 24 hours of discovery.

20 With the implementation of the above BMPs, construction of the Readiness Center under
21 the Preferred Alternative would result no impacts to cultural resources.

22 Solar Photovoltaic System

23 As stated above, the entire FETC has previously undergone cultural resources
24 investigations including the proposed project area. No prehistoric cultural resources were
25 encountered. One historic site was found: the Lovell Siding site; 26 CK 5685 is recorded
26 as a historic campsite or station associated with the railroad construction, and is located
27 within the UPRR easement. Due to vandalism and subsequent railroad construction 95%
28 of the site has been destroyed. This site is not considered eligible for inclusion to the
29 NRHP and would not be affected by the proposed action. No sacred sites have been
30 identified on the property. Therefore, impacts to cultural resources from the installation
31 of the SPVS would not be significant.

32 **5.7.2 No Solar Component Alternative**

33 Under the No Solar Component Alternative, construction of the Readiness Center and
34 associated infrastructure improvements would remain as previously described under the

1 Preferred Alternative, but installation of the SPVS would not be included as part of the
2 project. With regard to cultural resources, impacts would be the same as described for
3 the Preferred Alternative – no impact.

4 **5.7.3 No-Action Alternative**

5 Under the No-Action Alternative, the NVARNG would not implement the Proposed
6 Action and no impacts to cultural resources would occur.

7 **5.8 SOCIOECONOMICS**

8 Adverse socioeconomic impacts would result if a project alternative were to result in an
9 increase in population growth or demand for housing, schools, or community facilities,
10 and parks. Adverse impacts would also result from the displacement of a large number of
11 people, especially from affordable housing due to a decrease in local employment or a
12 decrease in the accessibility of community facilities and parks.

13 **5.8.1 Preferred Alternative**

14 5.8.1.1 Local Socioeconomic Conditions

15 Readiness Center

16 Construction of the proposed Readiness Center would generate a minor and temporary
17 increase in employment (average daily personnel level of 20). Construction of the
18 proposed facilities would commence in July 2010 and continue for approximately 24
19 months. Spending and business volume in the local economy would likely increase
20 during construction activities; however, such increases would be short-term and would
21 not result in significant socioeconomic impacts.

22 Two additional units would be stationed at FETC beginning in financial year 2011, upon
23 completion of the proposed Readiness Center: the 240th ENC and 100th QMC. A total
24 of six additional personnel would work at the proposed Readiness Center full-time;
25 however, on Interactive Duty Training (IDT) weekends, up to 350 reserve personnel from
26 the 240th ENC and 100th QMC would be located at the installation. Spending and
27 business volume in the local economy would also likely increase due to increased
28 personnel at the installation, as well as visiting personnel during IDT weekends.
29 However, the Las Vegas Valley, including North Las Vegas, has experienced rapid
30 population growth in the past ten years and businesses have proportionally increased to
31 accommodate the increased population base; any resulting socioeconomic needs due to

1 operation of the proposed Readiness Center would represent only a fraction of growth of
2 the Las Vegas Valley area and would not displace any people or housing. Therefore, the
3 proposed Readiness Center at FETC would result in less than significant socioeconomic
4 impacts.

5 Solar Photovoltaic System

6 Construction of the proposed SPVS would result in a temporary increase in employment
7 (average daily personnel level of 10) for the duration of the construction activities
8 (approximately 24 months). Spending and business volume in the local economy would
9 likely increase during construction activities; however, such increases would be short-
10 term and would have a negligible effect on local socioeconomic conditions.

11 Operation and maintenance of the proposed SPVS would require approximately two full-
12 time personnel. Increased personnel levels would likely increase spending and business
13 volume in the local economy; however, such increases would be minor and would have a
14 negligible effect on local socioeconomic conditions.

15 5.8.1.2 Energy Consumption

16 Readiness Center

17 As part of the Preferred Alternative, the NVARNG would purchase renewable energy to
18 support existing and proposed facilities at FETC – including the proposed Readiness
19 Center – through utilization of energy supplies from the proposed SPVS (see discussion
20 below).

21 Solar Photovoltaic System

22 Under the Preferred Alternative, the proposed SPVS would generate approximately 30
23 MW of net renewable energy. The NVARNG would purchase 3 MW of this renewable
24 energy from the private energy developer at discounted rates to supply current and
25 proposed energy needs, while the remainder would be sold to NV Energy at market rate.
26 The generation of additional electricity through renewable energy sources would assist
27 NV Energy with meeting state regulatory goals, as well as ensure a sustainable energy
28 supply for future project growth in the Las Vegas Valley area, thereby resulting in
29 beneficial impacts to socioeconomic conditions.

1 **5.8.2 No Solar Component Alternative**

2 Under the No Solar Component Alternative, the proposed Readiness Center and
3 associated infrastructure would be constructed, but the SPVS would not be installed. The
4 NVARNG would still purchase renewable energy, but the energy would be from existing
5 supplies and the NVARNG would not receive discounted rates. Impacts to local
6 socioeconomic conditions would be the same as the Preferred Alternative, less than
7 significant. With regard to energy consumption, elimination of the SPVS would remove
8 a potential 30 MW source of renewable energy from the NV Energy power grid. Such a
9 reduction would be less beneficial to energy consumption than the Preferred Alternative,
10 but would nonetheless be negligible on a regional scale.

11 **5.8.3 No-Action Alternative**

12 If the No-Action Alternative was selected, the NVARNG would not implement the
13 Proposed Action. Socioeconomic conditions would remain the same as described in
14 Section 4.8.

15 **5.9 ENVIRONMENTAL JUSTICE**

16 Implementing a project alternative would generate adverse impacts if it were to result in
17 disproportionate socioeconomic opportunities, increase adverse health and environmental
18 conditions of minorities or low-income populations, or endanger the health and safety of
19 children.

20 **5.9.1 Preferred Alternative**

21 5.9.1.1 Minority and Low-Income Populations

22 Readiness Center

23 The closest residential area to the proposed Readiness Center project site is located
24 approximately 0.75 miles to the west, across CC-215. However, construction and
25 operation of the proposed facilities is not anticipated to adversely impact this residential
26 area and would not disproportionately affect low-income or minority groups with regards
27 to economics or health affects.

28 Solar Photovoltaic System

29 A majority of the SPVS would be installed in the undeveloped northern and central
30 portions of FETC and would not be in the vicinity of any residential areas. One portion

1 of the SPVS, located near the proposed Readiness Center project site, would be located
2 approximately 0.75 miles from a nearby residential area. However, construction and
3 operation of the proposed SPVS is not anticipated to adversely impact this residential
4 area and would not disproportionately affect low-income or minority groups with regards
5 to economics or health affects. Although, the SPVS would be located in areas of the
6 installation that have historically contained unauthorized vagrant populations, none have
7 been observed recently and other areas near the installation would remain undisturbed;
8 therefore, no impacts to this population would result.

9 5.9.1.2 Protection of Children

10 Readiness Center

11 The nearest concentration of children to the proposed Readiness Center project site is at
12 Dickens Elementary School, located approximately 2.5 miles to the southwest. The
13 closest residential area is approximately 0.75 miles to the west. Due to the distance of the
14 proposed project site from nearby schools and residential areas, construction and
15 operation of the Readiness Center would not create an opportunity to expose children to
16 adverse health or safety conditions. Additionally, the proposed facilities would be
17 secured by fencing and a controlled entry point, limiting unauthorized access. Therefore,
18 the proposed Readiness Center would have no significant impacts on children.

19 Solar Photovoltaic System

20 A majority of the proposed SPVS would be installed in the undeveloped northern and
21 central portions of FETC and would not be in the vicinity of any concentrations of
22 children. One portion of the SPVS, located near the proposed Readiness Center project
23 site, would be located approximately 2.5 miles from Dickens Elementary School and 0.75
24 miles from a nearby residential area. However, due to the distance of the SPVS project
25 site from nearby concentrations of children, construction and operation activities would
26 not create an opportunity to expose children to adverse health or safety conditions. In
27 addition, the project site would be secured by fencing, limiting unauthorized access.
28 Consequently, the proposed SPVS would have no significant impacts on children.

29 **5.9.2 No Solar Component Alternative**

30 Under the No Solar Component Alternative, the proposed Readiness Center and
31 associated infrastructure would be constructed, but the SPVS would not be installed.
32 Construction and operation of the Readiness Center would be the same as described

1 under the Preferred Alternative; therefore, no significant impacts to minority or low-
2 income populations or children would result.

3 **5.9.3 No-Action Alternative**

4 Under the No-Action Alternative, the NVARNG would not implement the Proposed
5 Action, and no impacts to minority or low-income populations or children would occur.

6 **5.10 INFRASTRUCTURE AND SAFETY**

7 Adverse impacts to infrastructure would occur if implementing a project alternative
8 significantly increased demand for police and/or fire protection, or for electricity, natural
9 gas, water/wastewater, and/or telecommunications infrastructure. Adverse impacts to
10 safety would occur if implementing a project alternative would violate established safety
11 regulations (e.g., AT/FP standards) and/or cause an undue occupational health hazard.

12 **5.10.1 Preferred Alternative**

13 5.10.1.1 Police and Fire Protection

14 Readiness Center

15 The proposed Readiness Center would be designed to meet all applicable Federal, state,
16 and local fire safety regulations; therefore, impacts to fire protection would be less than
17 significant. No significant impacts to police protection are expected to result.

18 Solar Photovoltaic System

19 The proposed SPVS would be designed to meet all applicable fire safety regulations, and
20 it is not located in an area with significant fire hazards. As a result, any fire that could
21 result from electrical arcing would be confined to a small area and would not spread as
22 vegetation at the installation and in its vicinity is sparse and is characterized by widely-
23 spaced, low-lying shrubs. Any impacts to fire protection are expected to be less than
24 significant. No impacts to police protection would result.

25 5.10.1.2 Electricity

26 Readiness Center

27 As part of the proposed Readiness Center project, the NVARNG would purchase
28 renewable energy to support the needs of existing and proposed facilities at FETC.
29 Impacts would be beneficial, though less than significant with regard to potential impacts

1 to existing electrical utility infrastructure. As a component of the Preferred Alternative,
2 the NVARNG would purchase that renewable energy from the proposed SPVS system, as
3 further described below.

4 Solar Photovoltaic System

5 Construction of the proposed SPVS would result in the generation of up to approximately
6 30 MW of electricity from renewable sources. Under the Preferred Alternative, the
7 NVARNG would enter into a three-way power purchase agreement (PPA) with a private
8 utility developer and utility provider NV Energy to install and operate the proposed
9 SPVS. Under the PPA, the NVARNG would purchase approximately 3 MW of
10 electricity generated by the SPVS for use at FETC; remaining SPVS-generated electricity
11 (approximately 27 MW) would be sold to NV Energy for distribution via its utility power
12 grid system. Generation of additional electricity from renewable sources would result in
13 a beneficial impact to existing electrical utility infrastructure.

14 5.10.1.3 Natural Gas

15 Readiness Center

16 Existing natural gas infrastructure is located in the vicinity of the proposed Readiness
17 Center project site, along Range Road; therefore, no infrastructure extensions are needed.
18 Any impacts to natural gas infrastructure would be less than significant.

19 Solar Photovoltaic System

20 The proposed SPVS would not utilize natural gas; therefore, no impacts to natural gas
21 infrastructure would result.

22 5.10.1.4 Potable Water

23 Readiness Center

24 Existing City of North Las Vegas potable water infrastructure is located in the vicinity of
25 the proposed project site, along Range Road; therefore, any impacts to water
26 infrastructure are expected to be less than significant.

27 Solar Photovoltaic System

28 Operation of the SPVS would not require the use of potable water; therefore, no impacts
29 to potable water infrastructure are expected to result.

1 5.10.1.5 Sanitary Wastewater

2 Readiness Center

3 Existing sanitary wastewater infrastructure is located in the vicinity of the proposed
4 Readiness Center project site, along Range Road; therefore, no infrastructure extensions
5 are needed. Any impacts to sanitary wastewater infrastructure are expected to be less
6 than significant.

7 Solar Photovoltaic System

8 Operation of the SPVS would not require the use of sanitary wastewater infrastructure;
9 consequently, no impacts would result.

10 5.10.1.6 Stormwater

11 Readiness Center

12 The proposed Readiness Center project site would contain a series of channels to carry
13 stormwater off-site to peripheral areas. Proposed channels would improve drainage
14 during heavy rain events, resulting in a beneficial impact to existing on-site stormwater
15 infrastructure. Increased run-off due to construction of the proposed Readiness Center is
16 not expected to significantly impact nearby stormwater receiving bodies.

17 Solar Photovoltaic System

18 Installation of the SPVS is not expected to result in significant increases in stormwater
19 run-off. Site design, including grading, would address potential ponding and/or flooding.
20 Any remaining impacts to stormwater infrastructure would be less than significant.

21 5.10.1.7 Solid Waste

22 Readiness Center

23 Existing solid waste disposal services are considered adequate for disposal of solid waste
24 generated by construction and operation of the proposed Readiness Center. Any impacts
25 to solid waste are expected to be less than significant.

26 Solar Photovoltaic System

27 Neither construction nor operation of the SPVS is expected to result in the generation of
28 significant quantities of solid waste. Existing solid waste disposal services would be able

1 to adequately handle any increased generation of waste. Consequently, impacts to solid
2 waste would be less than significant.

3 5.10.1.8 Telecommunications

4 Readiness Center

5 Existing telecommunications infrastructure is adequate to support the proposed Readiness
6 Center; therefore, no impacts are expected to occur.

7 Solar Photovoltaic System

8 Installation of the SPVS would not require telecommunications infrastructure; therefore,
9 no impacts would occur.

10 **5.10.2 Safety**

11 Readiness Center

12 As part of the proposed Readiness Center project, the NVARNG would incorporate
13 security measures compliant with Anti-Terrorism/ Force Protection (AT/FP) standards,
14 including adequate setbacks from roads, parking areas, and vehicle unloading areas, as
15 well as fencing, berms, heavy landscaping, and bollards. Approximately 2,128 feet of
16 fencing would be constructed along the perimeter of the Readiness Center project site.
17 Primary vehicular access would be provided by a new access road established along the
18 southern edge of the project site and would be controlled via a high-security entry control
19 point located along Range Road, which would also serve to enhance security measures
20 for the existing facilities located in the main cantonment area. Impacts with regard to
21 safety would be beneficial due to increased compliance with established safety standards.

22 Solar Photovoltaic System

23 Access to the proposed SPVS would be controlled via a high-security entry control point
24 located along Range Road and would be limited to authorized personnel. In addition, the
25 SPVS would be subject to security measures designed by the private utility developer
26 (e.g., fencing, security cameras, etc.). Consequently, any impacts to safety would be less
27 than significant.

1 **5.10.3 No Solar Component Alternative**

2 5.10.3.1 Infrastructure

3 Under the No Solar Component Alternative, the proposed Readiness Center and
4 associated infrastructure would be constructed, but the SPVS would not be installed. As
5 a result, the NVARNG would be required to purchase renewable energy from an off-site
6 source. Purchase of off-site renewable energy would still allow the NVARNG to comply
7 with Executive Order (EO) 13423 –*Strengthening Federal Environmental, Energy, and*
8 *Transportation Management* – and the National Guard Bureau (NGB) environmental
9 Management System (eMS) regarding increased renewable energy use. However, the
10 NVARNG would purchase the energy at market rates, as opposed to discount rates
11 through implementation of the PPA under the Preferred Alternative. Consequently,
12 impacts to electricity infrastructure at FETC would be less beneficial than under the
13 Preferred Alternative; overall impacts, however, are expected to be less than significant.

14 Impacts to all other infrastructure at the installation are expected to remain the same as
15 under the Preferred Alternative, less than significant.

16 5.10.3.2 Safety

17 Under the No Solar Component Alternative, beneficial impacts due to increased
18 compliance with established safety standards would still occur. In addition, by not
19 constructing the SPVS, no security enhancement would be required for the approximately
20 300-acre SPVS area.

21 **5.10.4 No-Action Alternative**

22 Under the No-Action Alternative, the NVARNG would not implement the Proposed
23 Action. Beneficial impacts to safety, and electricity and potable water infrastructure
24 resulting from the Proposed Action would not occur, and adverse infrastructure and
25 safety conditions would remain as described under baseline conditions. Therefore, the
26 No Action Alternative would result in a significant impact to safety.

27 **5.11 TRAFFIC AND CIRCULATION**

28 Adverse traffic and circulation impacts would occur if implementing a project alternative
29 increased vehicle trips or traffic congestion, or resulted in reduced level-of-service (LOS)
30 ratings on adjacent roads to Level E or F. Impacts would also be considered significant if
31 the additional traffic created safety hazards from design features or incompatible uses,

1 resulted in inadequate access or parking capacity, created hazards to bicyclists or
2 pedestrians, or conflicted with adopted transportation planning policies.

3 **5.11.1 Preferred Alternative**

4 5.11.1.1 Regional

5 Readiness Center

6 Construction and operation of the proposed Readiness Center would not significantly
7 impact regional and local transportation networks. Construction activities would result in
8 a daily average of 20 personnel traveling to the Readiness Center project site. Once
9 operational, a total of six additional personnel would work at the proposed Readiness
10 Center full-time, and up to 350 additional reserve personnel would be located at the
11 installation on IDT weekends. However, vehicle trip increases would be negligible in
12 comparison to current average daily traffic (ADT) counts in the vicinity of FETC as
13 depicted in Figure 4-8 (see Section 4-11, *Traffic and Circulation*), and LOS ratings are
14 not expected to change.

15 Solar Photovoltaic System

16 Construction and operation of the proposed SPVS is not expected to impact regional and
17 local transportation networks. Construction activities would result in a daily average of
18 10 personnel traveling to the SPVS project site, in addition to delivery of partially-
19 assembled PV array components and construction materials. Increases in vehicle trips
20 due to construction of the SPVS would be short-term and negligible when compared to
21 current ADTs in the vicinity of the installation as depicted in Figure 4-8 (see Section 4-
22 11, *Traffic and Circulation*), and LOS ratings are not expected to change. Once
23 operational, minimal personnel would be needed for operation and maintenance of the
24 SPVS and would not be expected to impact traffic and transportation.

25 5.11.1.2 Access, Circulation, and Parking at FETC

26 Readiness Center

27 Construction of the proposed Readiness Center would include upgrades to existing
28 access, circulation, and parking infrastructure at FETC. Primary vehicular access to the
29 Readiness Center would be provided by a new access road located along the southern
30 edge of the project site. The road would be comprised of approximately 45,000 sf of
31 paving, and would provide upgraded circulation between the ECP, proposed Readiness

1 Center, and new and existing parking areas. In addition, approximately 36,000 sf of
2 sidewalk would be constructed for pedestrian circulation and access within the Readiness
3 Center complex. Parking area upgrades would consist of approximately 99,225 sf of
4 paved surface for POV parking and approximately 74,475 sf of space for MV parking.
5 Infrastructure upgrades associated with construction of the proposed Readiness Center
6 would be beneficial to access, circulation, and parking at the installation.

7 Solar Photovoltaic System

8 Construction and operation of the proposed SPVS would not impact access, circulation,
9 or parking at FETC. The project site would be accessible via Range Road. Construction-
10 related traffic is not expected to impact existing or proposed operations at the installation.
11 Operation of the SPVS would result in a negligible increase in vehicular traffic.

12 **5.11.2 No Solar Component Alternative**

13 Under the No Solar Component Alternative, the proposed Readiness Center and
14 associated infrastructure would be constructed, but the SPVS would not be installed.
15 Negligible decreases in vehicular traffic would occur due to elimination of construction
16 and operation of the SPVS; however, overall impacts to regional and local traffic and
17 circulation would remain the same as the Preferred Alternative, less than significant.
18 Impacts to access, circulation, and parking at FETC would remain beneficial.

19 **5.11.3 No-Action Alternative**

20 Under the No-Action Alternative, the NVARNG would not implement the Proposed
21 Action. Regional and local traffic and circulation would remain as described under
22 baseline conditions. Beneficial impacts to traffic and circulation at FETC would not
23 occur.

24 **5.12 HAZARDOUS AND TOXIC MATERIALS AND WASTE**

25 Adverse hazardous and toxic materials and waste effects would occur if an action were to
26 increase the risk of accidental explosion, fire hazards, or release of hazardous substances;
27 if it were to interfere with an emergency response or evacuation plan; or it were to expose
28 people or the environment to a potential health hazard.

1 **5.12.1 Preferred Alternative**

2 5.12.1.1 Hazardous Material and Petroleum Product Release Sites

3 Readiness Center

4 No hazardous material and petroleum product release sites are located in the general
5 vicinity of the Proposed Readiness Center project site; therefore, no impacts related to
6 release sites are expected to occur.

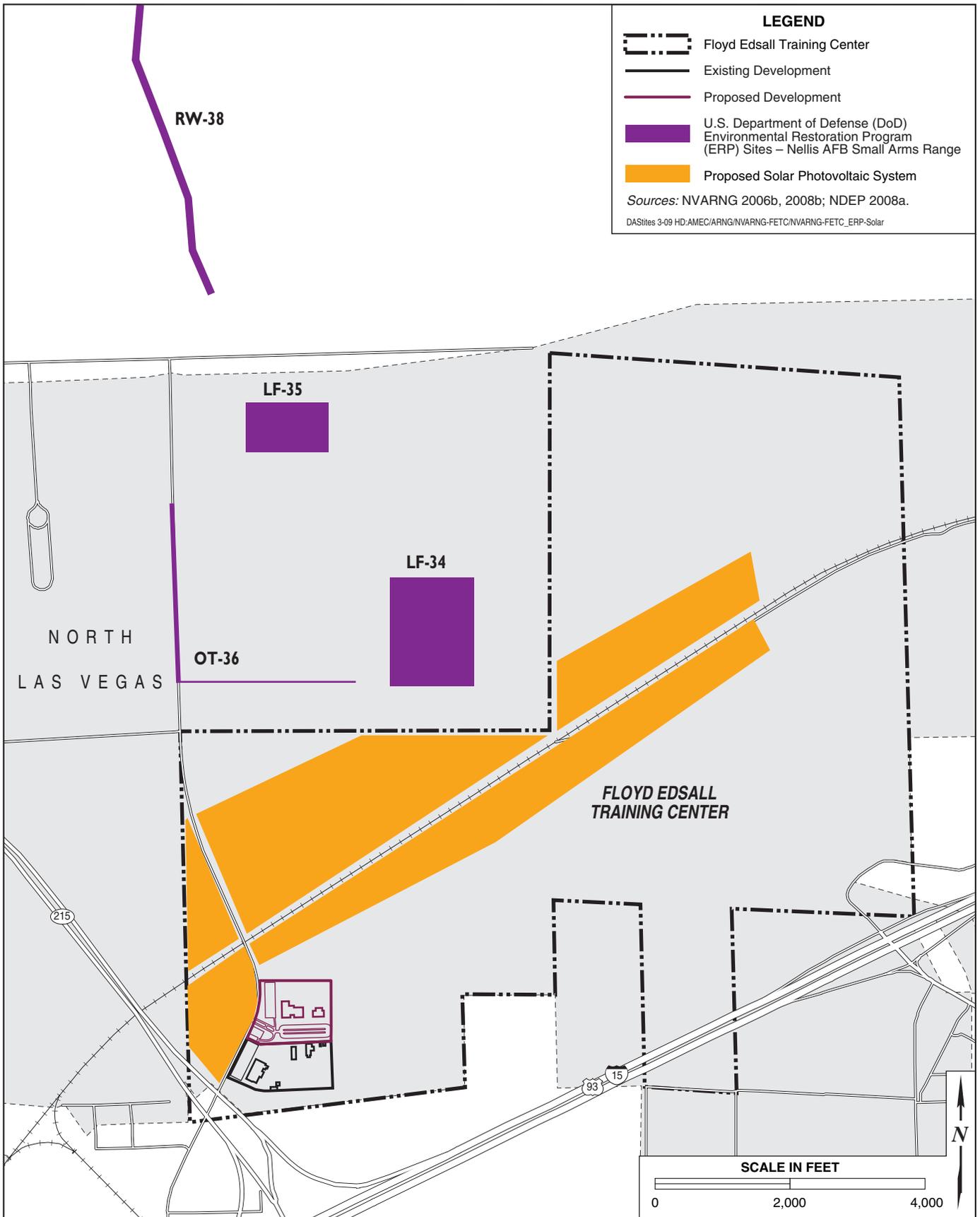
7 Solar Photovoltaic System

8 Two former disposal areas associated with the Nellis AFB Small Arms Range are located
9 to the north of the proposed SPVS project site, outside of FETC property (Figure 5-3).
10 One site, *Ordinance Disposal Area OT-36*, is listed as NFA status, and nearby
11 groundwater monitoring wells have failed to detect any contaminants potentially
12 associated with the site. Monitoring of the other site, *Landfill LF-34*, has also failed to
13 detect any evidence of contaminant migration, and an NFA Decision Document was
14 signed in 2007 (NVARNG 2008b). Groundwater monitoring wells installed at FETC
15 have failed to detect any contaminants in groundwater underlying the installation, and
16 there is no evidence that soil contamination has occurred on installation property
17 (NVARNG 2007a). As a precautionary measure, construction personnel would be
18 notified of the release sites on neighboring property, and construction activities would
19 cease if suspect materials or other signs of hazardous substances are detected during
20 ground-disturbing activities associated with construction of the SPVS. Once operational,
21 no further ground disturbance would be required, and no long-term impacts related to the
22 release sites would occur. Consequently, impacts related to release sites are expected to
23 be less than significant.

24 5.12.1.2 Construction Activities

25 Readiness Center

26 Construction of the proposed Readiness Center is anticipated to result in the generation of
27 a negligible quantity of hazardous wastes. All hazardous materials associated with
28 construction (e.g., oils, fuels, paints, and solvents) would be stored in accordance with
29 applicable hazardous and flammable storage regulations. Contractors would dispose of
30 hazardous wastes in accordance with applicable Federal and state laws and regulations.



U.S. Department of Defense (DoD) Environmental Restoration Program (ERP) Sites in the Vicinity of the Proposed Solar Photovoltaic System at the Floyd Edsall Training Center

FIGURE 5-3



No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

1 The presence of heavy construction equipment would increase the potential for minor
2 releases of petroleum products such as oil and fuel. To ensure safe handling and
3 management of any products containing hazardous materials, construction personnel
4 would operate in accordance with Federal and state regulations, as well as standard
5 NVARNG BMPs. Further, construction activities would comply with measures outlined
6 in the SWPPP, thereby reducing potential contamination to soils and/or groundwater to
7 less than significant levels. Consequently, impacts related to hazardous materials and
8 wastes due to construction of the proposed Readiness Center are expected to be less than
9 significant.

10 Solar Photovoltaic System

11 Construction of the proposed SPVS would be subject to the same regulations and BMPs
12 as the Readiness Center. Therefore, impacts related to hazardous materials and wastes
13 due to construction of the SPVS would be less than significant.

14 5.12.1.3 Operational Activities

15 Readiness Center

16 Operation of the proposed Readiness Center is expected to result in the storage of small
17 quantities of hazardous materials, as well as the generation a minor amount of hazardous
18 waste. The Readiness Center would contain a specific facility hazardous and flammable
19 material storage, and a controlled waste handling and storage facility. Both facilities
20 would operate in accordance with Federal and state regulations, and would be subject to
21 an implementation plan outlining procedures for proper handling, storage, use, disposal,
22 and cleanup of hazardous materials and wastes. Therefore, impacts related to the storage
23 and disposal of hazardous materials and wastes are expected to be less than significant.

24 Operation of the Readiness Center would include implementation of a SWPPP outlining
25 procedures to reduce potential contamination to surface water, groundwater, and soils.
26 The SWPPP would include specific measures to ensure that stormwater runoff from
27 parking areas and other impervious surfaces at the Readiness Center does not contain
28 toxic or hazardous substances. The SWPPP would also identify potential pollutants at the
29 Readiness Center and provide procedures for minimizing the environmental damage from
30 potential releases. Consequently, hazardous materials and wastes are not expected to
31 impact surface water, groundwater, or soils.

1 Operation of the Readiness Center would not interfere with emergency response plans,
2 would not create a potential health hazard, and would not increase fire hazards in the
3 vicinity of FETC. Implementation of BMPs would reduce any potential impacts related
4 to health and fire hazards to less than significant levels.

5 Solar Photovoltaic System

6 Operation of the proposed SPVS is expected to result in the generation and storage of a
7 negligible amount of hazardous materials and waste. The SPVS would be subject to the
8 same Federal and state regulations as the Readiness Center, and would follow the same
9 implementation plan outlining the proper handling, storage, use, disposal, and cleanup of
10 hazardous materials and wastes. Any potential impacts to surface water, groundwater,
11 and soils would be addressed in the SWPPP. Further, operation of the SPVS would not
12 interfere with emergency response plans, and would not create any potential health or fire
13 hazards. Therefore, impacts related to hazardous materials and wastes are expected to be
14 less than significant.

15 **5.12.2 No Solar Component Alternative**

16 Under the No Solar Component Alternative, the proposed Readiness Center and
17 associated infrastructure would be constructed, but the SPVS would not be built. Impacts
18 related to hazardous materials and wastes would remain the same as the Preferred
19 Alternative, less than significant.

20 **5.12.3 No-Action Alternative**

21 If the No-Action Alternative was selected, the NVARNG would not implement the
22 Proposed Action. Hazardous materials and wastes would remain as described under
23 baseline conditions.

24 **5.13 SUSTAINABILITY AND GREENING**

25 Determination of the significance of potential impacts to sustainability and greening is
26 based on the level of daily operations engaged to strengthen the management of
27 environmental resources. Additionally, determination of level of significance is based on
28 the proposed design of facility construction components in accordance with third-party,
29 nationally-accredited LEED standards for the design, construction, and operation of high-
30 performance green buildings. Further, determination of level of significance is based on
31 a project alternative's compliance with mandates under the NGB *eMS* which require

1 reductions in overall energy consumption and the replacement of existing use of fossil
2 fuels with energy generated from renewable sources.

3 **5.13.1 Preferred Alternative**

4 Readiness Center

5 Under the Preferred Alternative, the proposed Readiness Center would be constructed to
6 comply with the LEED *Silver Rating* (NVARNG 2007a). Specifically, the proposed
7 facility would include energy-efficient mechanical and electrical systems, as well as
8 insulated walls and windows. Incorporation of these design components would minimize
9 the amount of energy required for heating and cooling facility indoor spaces, and would
10 therefore be beneficial with regard to sustainability and greening at FETC.

11 Additionally, the NVARNG would purchase renewable energy to support the needs of
12 existing and proposed facilities at FETC. Purchasing energy from renewable sources
13 would assist the NVARNG in meeting NGB *eMS* energy use requirements, which would
14 consequently be beneficial with regard to sustainability and greening at the installation.
15 Specific to the Preferred Alternative, the NVARNG would purchase renewable energy
16 from the proposed SPVS system, as further described below.

17 Solar Photovoltaic System

18 Construction of the proposed SPVS would result in the generation of up to approximately
19 30 MW of electricity from renewable sources. Under the Preferred Alternative, the
20 NVARNG would enter into a three-way PPA with a private utility developer and utility
21 provider NV Energy to install and operate the proposed SPVS. Under the PPA, the
22 NVARNG would purchase approximately 3 MW of electricity generated by the SPVS at
23 a discounted rate for use at FETC; remaining SPVS-generated electricity (approximately
24 27 MW) would be sold to NV Energy for distribution via its utility power grid system.
25 Generation of electricity from renewable sources would result in a beneficial impact to
26 sustainability and greening at the installation, as well as provide the additional benefit of
27 generating clean energy for civilian uses.

28 **5.13.2 No Solar Component Alternative**

29 Under the No Solar Component Alternative, the proposed Readiness Center would be
30 constructed as described under the Preferred Alternative, but the SPVS would not be
31 installed. As a result, NVARNG would be required to purchase renewable energy from
32 an off-site source. With regard to sustainability and greening at FETC, beneficial

1 impacts would still occur due to construction of proposed facilities under the LEED
2 *Silver Rating*. Additionally, the purchase of renewable energy from an off-site source
3 would still be beneficial due to decreased use of energy generated from fossil fuels.
4 However, under the No Solar Component Alternative, the NVARNG would be required
5 to purchase renewable energy at market rates, as opposed to discount rates through
6 implementation of the PPA under the Preferred Alternative. Purchase of renewable
7 energy at market rates would provide a slightly less beneficial impact to sustainability
8 and greening at the installation and would withhold a potentially significant contribution
9 to the available renewable energy for civilian use in the region. Consequently, impacts to
10 sustainability and greening at FETC under No Solar Component Alternative would be
11 less beneficial than under the Preferred Alternative; however, overall impacts would be
12 less than significant.

13 **5.13.3 No-Action Alternative**

14 Under the No-Action Alternative, the NVARNG would not implement the Proposed
15 Action. Beneficial impacts resulting from the construction of LEED-certified facilities
16 and use of renewable energy would not occur, and sustainability and greening at FETC
17 would remain as described under baseline conditions.

18 **5.14 MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES**

19 Mitigation measures would not be required to reduce potentially significant effects to
20 resources to less than significant levels. However, the following BMPs (listed by
21 resource area) would be implemented to ensure that impacts are less than significant:

22 Air Quality

23 Implement the following dust control BMPs during demolition, earthmoving, or
24 excavation:

- 25 • Minimize the area disturbed by clearing, earthmoving, or excavating;
- 26 • Sufficiently water all excavated or graded areas to prevent excessive dust
27 generation;
- 28 • Limit construction vehicle speeds on unpaved surfaces at the construction site;
- 29 • Water or chemically treat unpaved active portions of the construction site to
30 minimize windblown dust and dust generated by vehicle traffic;
- 31 • Sweep paved portions of the construction site to control windblown dust and dust
32 generated by vehicle traffic; and

- 1 • Re-vegetate and landscape as soon as possible after disturbing the soil.

2 Noise

3 Implement the following BMP:

- 4 • Outfit all construction equipment with factory installed muffling devices and
5 ensure that all construction equipment is maintained in good working order.

6 Geology and Soils

7 Implement the following BMPs:

- 8 • Water and stockpile excavated soil to prevent erosive losses from construction
9 activities;
- 10 • Construct buildings in accordance with the 2003 International Building Code,
11 particularly with regard to seismic safety and subsidence;
- 12 • Prepare and implement a SWPPP as part of the NPDES permit conditions as
13 specified by the State of Nevada and the USEPA; and
- 14 • Prepare and implement an Erosion and Sediment Control Plan.

15 Water Resources

16 Implement the following BMPs:

- 17 • Prepare and implement a SWPPP; and
- 18 • Prepare and implement a Spill Prevention, Containment, and Cleanup Plan as
19 specified by Army Regulations.

20 Biological Resources

21 Implement the following BMPs:

- 22 • As outlined in the USFWS Biological Opinion dated 8 July 1992, NVARNG
23 would pay mitigation fees for potential incidental take of desert tortoise;
- 24 • Conduct burrowing owl surveys in the vicinity of proposed project sites and
25 evaluate breeding status of known nests when located within 200 feet of
26 construction activities during breeding season (mid March through August);
- 27 • Conduct surveys to determine the presence of suitable habitat and potential
28 locations of Las Vegas bearpoppy and Las Vegas buckwheat;
- 29 • Conduct surveys for cacti and yucca species protected under NRS 527.060-.120
30 and obtain written permission from NDF if any removal is required; and
- 31 • Conduct noxious weed survey in accordance with NRS 555.150 and BLM
32 regulations.

1 Cultural Resources

2 Implement the following BMPs:

- 3 • Construction staff shall be briefed on procedures for handling the unexpected
4 discovery of archeological resources and human remains prior to undertaking
5 project activities;
- 6 • In the unlikely event that cultural resources were encountered within the project
7 area during ground-disturbing activities, all work in the area of the find would
8 stop until a qualified archaeologist had documented and evaluated the resource for
9 eligibility for the NRHP, in compliance with Section 106 of the NHPA; and
- 10 • In the event that human remains were discovered, all work in the area would stop
11 and the Clark County Coroner would be notified immediately. If the remains
12 were determined to be Native American, then the Native American tribes with
13 interest in the area would be notified within 24 hours of discovery.

14 Hazardous and Toxic Materials and Wastes

15 Implement the following BMPs:

- 16 • All fill and debris associated with hazardous materials or wastes shall be
17 characterized and disposed of according to Federal, state, and local regulations.
- 18 • Prepare and implement a SWPPP.

19 **5.15 CUMULATIVE IMPACTS**

20 This section describes regional projects and discusses the cumulative impacts of those
21 projects in combination with the effects of the Preferred Alternative. Cumulative projects
22 include regional past, present, and reasonably foreseeable actions and were identified
23 through dialogue with internal and adjacent external user groups that were identified in
24 the NVARNG’s Site Development Master Plan (NVARNG 2007a). The cumulative
25 projects considered in this analysis consist of reasonably foreseeable development
26 projects at FETC. These projects are listed below:

- 27 • Additions and alterations to existing FETC facilities totaling approximately
28 116,210 sf of construction;
- 29 • Establishment of a Unit Training Equipment Site Program adjacent to existing
30 cantonment area at FETC, including an approximately 66,000-sf facility;
- 31 • Establishment of a Regional Training Institute Program, including an
32 approximately 168,849-sf primary facility on a 5-acre site located on east side of
33 FETC;

- 1 • Construction of a 27,000-sf Nevada Highway Patrol Substation and Training
2 Center on a 10-acre site located on the east side of FETC;
- 3 • Construction of a 35,000-sf maximum security Department of Health and Human
4 Services facility on a 15-acre site located on the east side of FETC;
- 5 • Construction of a 35,000-sf DMV satellite office on a 15-acre site located on the
6 east side of FETC;
- 7 • Construction of a 27,400-sf NDOT maintenance station on a 5-acre site located on
8 the east side of FETC, in addition, NDOT is evaluating a Park and Ride facility
9 on a 7-acre site located on the southeast corner of FETC; and
- 10 • Establishment of an Emergency Vehicles Operations Course on 223 acres located
11 on the northeast portion of FETC to include a 45,000-sf facility to be utilized by
12 the NVARNG and multiple local and state agencies for vehicle training.

13 Overall, the Proposed Action would result in potentially significant cumulative impacts to
14 biological resources. Less than significant cumulative impacts are anticipated for all
15 other individual resources areas (discussed below) in relationship to other cumulative
16 projects.

- 17 • **Land Use and Visual Resources.** The Preferred Alternative would occur on a
18 currently vacant portion of FETC that is available for development. Establishment of the proposed Readiness Center and SPVS is not expected to
19 impact surrounding land use. The Preferred Alternative would change existing
20 uses (from vacant to developed public facilities); however, the conversion of the
21 land would be consistent with the land's current zoning designation (Public/Semi-
22 Public). With regards to visual resources, no designated scenic vistas or highways
23 exist in the vicinity of FETC. Therefore, implementation of the Preferred
24 Alternative would result in less than significant cumulative impacts to land use
25 and visual resources.
26
- 27 • **Air Quality.** The Preferred Alternative would not result in a significant change in
28 the local air quality during construction or operation of the Readiness Center and
29 SPVS. Concurrent construction of other facilities at FETC could temporarily
30 result in greater air emissions mainly from earth-moving activities, construction
31 vehicles, and increased vehicle traffic. However, emissions would be controlled
32 by the project proponents through the planning process, following applicable
33 Federal, state, and local guidelines; and by implementing BMPs on a project-by-
34 project basis. Therefore, cumulative air quality impacts would be less than
35 significant.
- 36 • **Noise.** Noise levels are not anticipated to be increased significantly in the short-
37 term from construction or over the long-term from on-going operations.
38 Concurrent construction at FETC would result in increased noise levels during the
39 construction activities; however, no sensitive receptors are located within 0.75
40 miles of FETC and noise levels would be reduced through the planning process,

1 following Federal guidelines, and implementation of noise reduction BMPs.
2 Therefore, cumulative noise impacts would be less than significant.

- 3 • **Geology and Soils.** The geology and soils affected by the Preferred Alternative
4 are limited to the project site and could be impacted by cumulative projects at
5 FETC. However, no unique geologic features or soils have been classified at
6 FETC and a majority of the development associated with cumulative projects
7 would occur on previously disturbed land that is capable of supporting such
8 development. In addition, potential erosion related to the Preferred Alternative
9 would be reduced through implementation of BMPs and proposed facilities would
10 be built in accordance with 2003 International Building Code with regards to
11 seismic safety and subsidence. Therefore, cumulative impacts to geology and
12 soils would be less than significant.

- 13 • **Water Resources.** The Preferred Alternative would increase the amount of
14 impermeable surfaces and runoff at FETC. Several unnamed ephemeral
15 drainages exist at FETC; however, portions of these drainages have been
16 previously modified to divert surface water runoff at the installation along the
17 railway in a westerly direction to areas off FETC property. In addition, project
18 impacts would be reduced through BMPs including the development of a SWPPP
19 and compliance with a NPDES permit. In addition, FETC is not located within
20 any 100- or 500-year flood zones and construction of the Preferred Alternative
21 and cumulative projects would not have the potential to impact groundwater
22 resources or wetland resources. Therefore, cumulative impacts to water resources
23 would be less than significant.

- 24 • **Biological Resources.** FETC has been disturbed through previous training and
25 grading and fill activities and is comprised of low-density desert scrubland
26 characterized by light to medium levels of disturbance. In addition, a number of
27 wildlife species which have adapted to the human-influenced landscape have been
28 observed foraging on and passing through FETC property. No designated
29 sensitive or critical habitats are located at FETC; however, two sensitive wildlife
30 species – desert tortoise and borrowing owl – and two sensitive plant species have
31 the potential to occur at the installation. With regards to desert tortoise, FETC
32 currently operates under the conditions of a USFWS Biological Opinion that
33 requires payment of mitigation fees for permanently or temporarily disturbing
34 tortoise habitat and any potential incidental take. Implementation of the Preferred
35 Alternative, in addition to other planned and foreseeable development in the
36 vicinity, is expected to result in potentially cumulative significant impacts to
37 biological resources. Regulatory requirements and implementation of BMPs
38 would minimize the potential for adverse effects to biological resources.

- 39 • **Cultural Resources.** The entirety of FETC has undergone cultural resources and
40 archeological investigations. No prehistoric cultural resources, archeological
41 resources, or Native American sacred sites have been identified on the property.
42 In the event that cultural resources or human remains are discovered during
43 excavation, individual project proponents would be required to stop work and

1 implement appropriate BMPs. Therefore, no cumulative impacts to cultural
2 resources are expected to occur.

3 • **Socioeconomics.** The Preferred Alternative would generate a total of
4 approximately 10 full-time jobs and would not be expected to significantly
5 increase the demand for housing, schools, or recreational areas. Although specific
6 permanent employment numbers are not currently available for cumulative
7 projects included in this analysis, the Las Vegas Valley, including North Las
8 Vegas, has experienced rapid population growth in the past ten years and
9 businesses have proportionally increased to accommodate the increased
10 population base; any resulting socioeconomic needs would represent only a
11 fraction of growth of the Las Vegas Valley area and would not displace any
12 people or housing. Therefore, cumulative impacts to socioeconomics are
13 considered less than significant.

14 • **Environmental Justice.** The Preferred Alternative is not expected to
15 disproportionately impact low-income or minority groups. With regard to the
16 protection of children, no impacts would occur. All other cumulative proposed
17 projects are located on FETC and away from residential areas and children.
18 Therefore, cumulative impacts to environmental justice are not expected.

19 • **Infrastructure and Safety.** Implementation of the Preferred Alternative and
20 construction of the proposed SPVS would generate a total of approximately 30
21 MW of renewable energy to the grid, including approximately 3 MW which
22 would be purchased at a discounted rate for use by the NVARNG. This supply
23 would result in a decrease in energy demand from existing and proposed
24 NVARNG facilities at FETC. Other public utilities including potable water,
25 natural gas, and telecommunications would be supplied by existing, readily-
26 available infrastructure to support the Preferred Alternative in addition to
27 cumulative projects. Therefore, cumulative impacts with regard to infrastructure
28 would be less than significant. With regard to safety, implementation of the
29 Preferred Alternative is expected to result in beneficial, less than significant
30 impacts with regard to AT/FP measures. The creation of an additional Nevada
31 Highway Patrol substation would also result in beneficial impacts to public safety.
32 Therefore, cumulative impacts to safety are considered less than significant and
33 beneficial.

34 • **Transportation and Circulation.** With regard to traffic and circulation,
35 concurrent construction at FETC could temporarily cause potentially significant
36 impacts to regional roadways. However, concurrent construction of other
37 cumulative projects is not anticipated and implementation of BMPs such as
38 construction traffic traveling at non-peak hours and keeping construction vehicles
39 on-site for the duration of construction would reduce impacts to less than
40 significant levels. Once operational, additional traffic flow on regional roadways
41 would increase as a result of new facilities and developments. However, the
42 additional traffic is not expected to exceed the capacity of local roadways.
43 Therefore, cumulative impacts would be less than significant.

- 1 • **Hazardous and Toxic Materials and Waste.** The majority of cumulative
2 hazardous and toxic materials and waste impacts would be project-specific,
3 depending on the individual projects' components. Cumulatively, hazardous
4 waste could be generated during construction activities; however, any increase
5 would be temporary and would be disposed of according to local, state, and
6 Federal regulations. As described in Section 4.12, no ERP or NDEP release sites
7 are located within FETC. Since all projects considered in this cumulative analysis
8 would occur on FETC property, no contaminated soils are expected to be
9 uncovered during grading and construction activities. Therefore, cumulative
10 impacts would be less than significant.
- 11 • **Sustainability and Greening.** Construction of the proposed SPVS would result
12 in the generation of up to approximately 30 MW of electricity from renewable
13 sources which would be made available to utility power grid system. In addition
14 to the purchase and use of up to 3 MW of this renewable energy source, proposed
15 NVARNG facilities at FETC would be constructed to comply with the LEED
16 *Silver Rating* for energy-efficiency. Specific information regarding proposed
17 energy use and efficiency for other cumulative projects is not available at this
18 time; however, SPVS-generation of electricity from renewable sources would
19 result in a beneficial impact to sustainability and greening at the installation, as
20 well as provide the additional benefit of generating a substantial amount of
21 renewable energy for other users. Therefore, cumulative impacts would be
22 considered less than significant and beneficial.

1
2
3
4
5
6
7
8
9
10
11

SECTION 6
COMPARISON OF ALTERNATIVES AND CONCLUSIONS

6.1 COMPARISON OF ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

Through the implementation of regulatory requirements and the use of standard practices and appropriate BMPs, potential adverse impacts of the Preferred Alternative would not result in any long-term, negative, direct, or indirect significant impacts on land use and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, environmental justice, infrastructure and safety, transportation and circulation, hazardous and toxic materials and waste, or sustainability and greening (Table 6-1).

Table 6-1. Summary of Environmental Impacts

| | Preferred Alternative | No Solar Alternative | No-Action Alternative |
|---|-----------------------|----------------------|-----------------------|
| Land Use and Visual Resources | ⊖ | ⊖ | ○ |
| Air Quality | ⊖ | ⊖ | ○ |
| Noise | ⊖ | ⊖ | ○ |
| Geology and Soils | ⊖ | ⊖ | ○ |
| Water Resources | ⊖ | ⊖ | ○ |
| Biological Resources | ⊖ | ⊖ | ○ |
| Cultural Resources | ⊖ | ⊖ | ○ |
| Socioeconomics | ⊖ | ⊖ | ○ |
| Environmental Justice | ⊕ | ⊕ | ○ |
| Infrastructure and Safety | ⊕ | ⊕ | ● |
| Transportation and Circulation | ⊖ | ⊖ | ○ |
| Hazardous and Toxic Materials and Waste | ⊖ | ⊖ | ○ |
| Sustainability and Greening | ⊕ | ⊕ | ⊖ |

LEGEND:

- = Significant adverse effect
- ⊖ = Less than significant adverse effect
- ⊕ = Beneficial effect
- = No effect

Similarly, the selection of the No-Solar Component Alternative would not result in any long-term, negative, direct, or indirect significant impacts on land use and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, environmental justice, infrastructure and safety,

1 transportation and circulation, hazardous and toxic materials and waste, or sustainability
2 and greening.

3 The selection of the No-Action Alternative would result in no physical changes at the
4 existing Readiness Center at FETC, thus no impacts would occur for each of the
5 discussed resource topics. However, the current situation is considered significantly
6 adverse with regard to infrastructure and safety (e.g., AT/FP standards); therefore,
7 selection of the No-Action Alternative would result in continued significant adverse
8 conditions at existing facilities at FETC.

9 **6.2 CONCLUSIONS**

10 Based on the analysis in this EA, the Preferred Alternative does not have the potential to
11 degrade the quality of the environment, to substantially reduce the habitat of a fish or
12 wildlife species, to cause a fish or wildlife population to drop below self-sustaining
13 levels, to threaten to eliminate a plant or animal community, to reduce the number or
14 restrict the range of a rare or endangered plant or animal, or to eliminate important
15 examples of the major periods of American history or prehistory. In addition,
16 implementation of the No-Solar Component Alternative would not have environmental
17 effects that would have substantial adverse effects on humans, either directly or
18 indirectly. Therefore, the Proposed Action would have no significant adverse direct,
19 indirect, or cumulative impacts on the quality of the natural or human environment.

- 1 City of North Las Vegas. 2008b. *City of North Las Vegas Municipal Code*. Available
2 at: <http://ordlink.com/codes/nolasvegas/index.htm>. Accessed: 10 February 2009.
- 3 City of North Las Vegas. 2008c. *City of North Las Vegas – Department of Utilities/
4 Business Services*. Available at: [http://www.cityofnorthlasvegas.com/
5 departments/utilities/utilitiesbusinessservices.shtm](http://www.cityofnorthlasvegas.com/departments/utilities/utilitiesbusinessservices.shtm). Accessed: 1 November
6 2008.
- 7 Clark County. 2005. *Sunrise Manor Land Use Plan*. Prepared by the Clark County
8 Comprehensive Planning Department. September.
- 9 Clark County. 2007. *Clark County, Nevada – 2007 Population Estimates by Place/
10 Community*. Clark County Department of Comprehensive Planning. Available at:
11 [http://www.accessclarkcounty.com/depts/comprehensive_planning/
12 Pages/demographics.aspx](http://www.accessclarkcounty.com/depts/comprehensive_planning/demographics/Pages/demographics.aspx). Accessed: 29 October 2008.
- 13 Clark County. 2008a. *Sunrise Manor – Planned Land Use*. Prepared by the Clark
14 County Comprehensive Planning Department. 2 April.
- 15 Clark County. 2008b. *Clark County Largest Employers – First Quarter 2008*. Available
16 at: [http://www.accessclarkcounty.com/depts/comprehensive_planning/
17 demographics/Pages/demographics.aspx](http://www.accessclarkcounty.com/depts/comprehensive_planning/demographics/Pages/demographics.aspx). Accessed: 8 October 2008.
- 18 Clark County. 2008c. *Parks and Special Facilities*. Clark County Parks and Recreation.
19 Available at: [http://www.accessclarkcounty.com/depts/parks/pages/Park-
20 facilities-info.aspx](http://www.accessclarkcounty.com/depts/parks/pages/Park-facilities-info.aspx). Accessed: 29 October 2008.
- 21 Clark County Fire Department (CCFD). 2008a. *CCFD – Complete List of Stations*.
22 Available at: [http://fire.co.clark.nv.us/\(S\(dmhuzz55y1y5ji454rmsve45\)\)/List.aspx](http://fire.co.clark.nv.us/(S(dmhuzz55y1y5ji454rmsve45))/List.aspx).
23 Accessed: 1 November 2008.
- 24 Clark County Depart of Air Quality and Environmental Management. 2005. *2005 Major
25 Source Actual Emissions*.
- 26 CCFD. 2008b. *CCFD – Map of Urban Area Fire Stations*. Available at:
27 [http://fire.co.clark.nv.us/\(S\(dmhuzz55y1y5ji454rmsve45\)\)/Urban.aspx](http://fire.co.clark.nv.us/(S(dmhuzz55y1y5ji454rmsve45))/Urban.aspx). Accessed:
28 1 November 2008.
- 29 Clark County School District (CCSD). 2008. *CCSD – Zoning Information*. Available
30 at: <http://www.ccsd.net/schools/zoning/>. Accessed: 29 October 2008.
- 31 Clark County Sheriff’s Office. 2008. *Clark County Sheriff’s Office*. Available at:
32 <http://www.clarkcountysheriff.com/>. Accessed: 1 November 2008.
- 33 Clark County Water Reclamation District (CCWRD). 2008. *CCWRD – Service Area*.
34 Available at: [http://www.cleanwaterteam.com/
35 servicearea.html](http://www.cleanwaterteam.com/servicearea.html). Accessed: 1 November 2008.

- 1 Federal Emergency Management Agency (FEMA). 2002a. *FEMA Floodplain Maps of*
2 *Clark County Unincorporated and Incorporated Areas* (Map Panel No.
3 32003C1800D, Effective 27 September 2002). Available at:
4 <http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>. Accessed: 10 December 2008.
- 6 FEMA. 2002b. *FEMA Floodplain Maps of Clark County Unincorporated and*
7 *Incorporated Areas* (Map Panel No. 32003C1825E, Effective 27 September
8 2002). Available at: <http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>. Accessed: 10
9 December 2008.
10
- 11 Kern River Gas Transmission Company. 2008. *Kern River Gas Pipeline – Energizing*
12 *the West* (promotional brochure). Prepared by the Kern River Gas Transmission
13 Company.
- 14 National Weather Service. 2005. Climate Summary for Las Vegas, Nevada. Available
15 at: <http://www.wrh.noaa.gov/vef/climate/page1.php>. Accessed: 12 February
16 2009.
- 17 NatureServe. 2008. *NatureServe Explorer*. Available at: <http://www.natureserve.org/explorer/index.htm>. Accessed: 2 December 2008.
18
- 19 Nevada Army National Guard (NVARNG). 2006a. *Final Environmental Assessment for*
20 *Leasing Nellis Air Force Base (AFB) Land for Construction and Operation of a*
21 *Solar Photovoltaic System, Clark County, Nevada*. Prepared by the NVARNG.
22 August.
- 23 NVARNG. 2006b. *Draft Integrated Natural Resources Management Plan (INRMP) for*
24 *Floyd Edsall Training Center (FETC), Las Vegas, Nevada*. Prepared by the
25 NVARNG. 23 June.
- 26 NVARNG. 2007a. *FETC – Site Development Master Plan (Pre-Final Report)*. Prepared
27 by Jacobs Engineering Group, Inc. for the NVARNG. 3 October.
- 28 NVARNG. 2007b. *Draft Environmental Assessment for the Integrated Natural*
29 *Resource Management Plan (INRMP) at Nellis Air Force Base and the Nevada*
30 *Test and Training Range, Nevada*. Prepared by the NVARNG. May.
- 31 NVARNG. 2008a. *FETC – Preferred Master Plan Concept*. Prepared by the
32 NVARNG. Undated.
- 33 NVARNG. 2008b. *Environmental Baseline Survey of the Proposed Small Arms Range*
34 *Complex on Nellis AFB Property, North Las Vegas, Nevada*. Prepared by the
35 NVARNG. September.
- 36 NVARNG. 2008c. Personal Communication with Mr. Forrest Fox and Mr. Clayton
37 Chappell (telephone conversation). 19 December.

- 1 Nevada Bureau of Mines and Geology (NBMG). 1965. *NBMG Bulletin 62 – Geology*
2 *and Mineral Deposits of Clark County, Nevada*. Prepared by C.R. Longwell,
3 E.H. Pampeyan, B. Bowyer, and R.J. Roberts.
- 4 NBMG. 2003. *Las Vegas Valley Fault Map*. Available at: [http://www.seismo.unr.edu/](http://www.seismo.unr.edu/htdocs/las-vegas-faults.html)
5 [htdocs/las-vegas-faults.html](http://www.seismo.unr.edu/htdocs/las-vegas-faults.html). Accessed: 4 November 2008.
- 6 NBMG. 2007a. *NBMG Special Publication P-19 – Major Mines of Nevada 2007 –*
7 *Mineral Industries in Nevada’s Economy*. Prepared by NBMG, Nevada Division
8 of Minerals. 2008.
- 9 NBMG. 2007b. *NBMG Open-File Report 07-01 – Assessment of Risks and Vulnerability*
10 *to Earthquake Hazards in Nevada*. Prepared by NBMG. 30 December.
- 11 Nevada Department of Employment, Training, and Rehabilitation. 2008. *Labor Force –*
12 *Clark County*. Available at: [http://www.nevadaworkforce.com/cgi/dataanalysis/](http://www.nevadaworkforce.com/cgi/dataanalysis/?PAGEID=94&SUBID=141)
13 [?PAGEID=94&SUBID=141](http://www.nevadaworkforce.com/cgi/dataanalysis/?PAGEID=94&SUBID=141). Accessed: 8 October 2008.
- 14 Nevada Department of Environmental Protection (NDEP). 2008a. *NDEP Project*
15 *Tracking – Snapshot of Confirmed Release Cases Closed between 01/01/1990 and*
16 *10/06/2008*. Available at: [http://ndep.nv.gov/bca/file/closed_cases_snapshot.](http://ndep.nv.gov/bca/file/closed_cases_snapshot.htm)
17 [htm](http://ndep.nv.gov/bca/file/closed_cases_snapshot.htm). Accessed: 9 October 2008.
- 18 NDEP. 2008b. *NDEP Project Tracking – Active Cases Snapshot (report created on*
19 *10/06/2008)*. Available at: [http://ndep.nv.gov/bca/file/](http://ndep.nv.gov/bca/file/active_cases_snapshot.htm) [active_cases_snapshot.](http://ndep.nv.gov/bca/file/active_cases_snapshot.htm)
20 [htm](http://ndep.nv.gov/bca/file/active_cases_snapshot.htm). Accessed: 9 October 2008.
- 21 Nevada Department of Transportation (NDOT). 2007. *NDOT – Annual Traffic Report*.
22 Prepared by NDOT.
- 23 Nevada Department of Wildlife (NDOW). 2004. *Clark County Rare Species List*.
24 Available at: [http://heritage.nv.gov/lists/](http://heritage.nv.gov/lists/coclark.htm) [coclark.htm](http://heritage.nv.gov/lists/coclark.htm). Accessed: 2 December
25 2008.
- 26 Nevada Division of Water Resources (NDWR). 2008. *Nevada Hydrographic Regions*
27 *(Basins), Areas, and Sub-Areas*. Available at: [http://water.nv.gov/](http://water.nv.gov/WaterPlanning/basins/hydro_nv.cfm)
28 [WaterPlanning/basins/hydro_nv.cfm](http://water.nv.gov/WaterPlanning/basins/hydro_nv.cfm). Accessed: 4 December 2008.
- 29 Nevada Natural Heritage Program (NNHP). 2001. *Nevada Rare Plant Atlas*. Available
30 at: <http://heritage.nv.gov/atlas/atlas.html>. Accessed: 2 December 2008.
- 31 Nevada Revised Statute (NRS). 1979. *NRS, Chapter 527.060-.120: Protection of*
32 *Christmas Trees, Cacti, and Yucca*. Revised 1979. Available at:
33 <http://www.leg.state.nv.us/NRS/NRS-527.html>. Accessed: 2 December 2008.
- 34 NRS. 1997. *NRS, Chapter 555.150: Control of Insects, Pests, and Noxious Weeds –*
35 *Eradication of Noxious Weeds by Owner or Occupant of Land*. Revised 1997.

- 1 Available at: <http://www.leg.state.nv.us/NRs/NRS-555.html>. Accessed: 2
2 December 2008.
- 3 NRS. 1999. *NRS, Chapter 555.005: Control of Insects, Pests, and Noxious Weeds –*
4 *Definitions*. Revised 1999. Available at: [http://www.leg.state.nv.us/NRs/NRS-](http://www.leg.state.nv.us/NRs/NRS-555.html)
5 [555.html](http://www.leg.state.nv.us/NRs/NRS-555.html). Accessed: 2 December 2008.
- 6 NRS. 2007a. *NRS, Chapter 501: Wildlife – Administration and Enforcement*. Revised
7 2007. Available at: [http://www.leg.state.nv.us/NRs/ NRS-501.html](http://www.leg.state.nv.us/NRs/NRS-501.html). Accessed: 2
8 December 2008.
- 9 NRS. 2007b. *NRS, Chapter 704.7801-.7828: Regulation of Public Utilities Generally –*
10 *Portfolio Standards*. Revised 2007. Available at: [http://www.leg.state.nv.us/](http://www.leg.state.nv.us/NRs/NRS-704.html)
11 [NRs/ NRS-704.html](http://www.leg.state.nv.us/NRs/NRS-704.html). Accessed: 12 December 2008.
- 12 NV Energy. 2008. *Energy Efficiency Rebates*. Available at: [http://www.nvenergy.com/](http://www.nvenergy.com/saveenergy/home/rebates)
13 [saveenergy/home/rebates](http://www.nvenergy.com/saveenergy/home/rebates). Accessed: 12 December 2008.
- 14 Reginato and Piechota. 2002. Reginato, Marcelo, and Thomas Piechota. *A Geographic*
15 *Information Systems (GIS) Nonpoint Source Pollution Model for the Las Vegas*
16 *Valley*. Conference Proceeding Paper presented for Urban Drainage 2002, Ninth
17 Annual International Conference on Urban Drainage, Global Solutions for Urban
18 Drainage. Department of Civil and Environmental Engineering, University of
19 Nevada, Las Vegas, Nevada.
- 20 Republic Services. 2008. *Republic Services Locations – Clark County, NV*. Available
21 at: [http://www.republicservicesvegas.com/index.cfm?page=db&pageid=64&](http://www.republicservicesvegas.com/index.cfm?page=db&pageid=64&languageid_select=)
22 [languageid_select=](http://www.republicservicesvegas.com/index.cfm?page=db&pageid=64&languageid_select=). Accessed: 1 November 2008.
- 23 Southern Nevada Water Authority (SNWA). 2008a. *Las Vegas Wash*. Available at:
24 http://www.snwa.com/html/env_lvwash.html. Accessed: 19 December 2008.
- 25 SNWA. 2008b. *Las Vegas Valley Groundwater Management Program (LVVGWMP) –*
26 *Wells & Groundwater*. Available at: [http://www.lasvegasgmp.org/html/](http://www.lasvegasgmp.org/html/lvgw_index.html)
27 [lvgw_index.html](http://www.lasvegasgmp.org/html/lvgw_index.html). Accessed: 19 December 2008.
- 28 Trulio. 1995. Trulio, L. A. *Passive Relocation: A Method to Preserve Burrowing Owls*
29 *on Disturbed Sites*. *Journal of Field Ornithology* 66: 99-106.
- 30 Union Pacific Railroad (UPRR). 2007. *UPRR – System Map*. Available at:
31 <http://www.uprr.com/aboutup/maps/sysmap.shtml>. Accessed: 12 October 2008.
- 32 U.S. Air Force (USAF). 2002. *Nellis AFB General Plan*. Prepared by HB&A for Nellis
33 AFB. October.
- 34 USAF. 2003. *Predator Force Structure Changes at Indian Springs Air Force Auxiliary*
35 *Field Nevada Final Environmental Assessment*. July

- 1 USAF. 2006. *Final Environmental Assessment for Leasing Nellis Air Force Base Land*
2 *for Construction and Operation of a Solar Photovoltaic System, Clark County,*
3 *Nevada.* August.
- 4 U.S. Bureau of Land Management (BLM). 2004. *Las Vegas Valley Disposal Boundary*
5 *Final Environmental Impact Statement, Clark County, Nevada.* Available at:
6 [http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/planning/las_vegas_valley_di](http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/planning/las_vegas_valley_disposal.html)
7 [sposal.html](http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/planning/las_vegas_valley_disposal.html). Accessed: 5 December 2008.
- 8 BLM. 2008. *BLM Nevada's War against Weeds.* Available at:
9 http://www.blm.gov/nv/st/en/prog/more_programs/invasive_species.2.html.
10 Accessed: 2 December 2008.
- 11 U.S. Census Bureau. 2000. *American FactFinder – 2000 U.S. Census.* Available at:
12 <http://factfinder.census.gov/>. Accessed: 2 October 2008.
- 13 U.S. Census Bureau. 2006. *American Community Survey – Nevada FactFinder.*
14 Available at: [http://factfinder.census.gov/home/saff/](http://factfinder.census.gov/home/saff/main.html?_lang=en) [main.html?_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en).
15 Accessed: 8 October 2008.
- 16 U.S. Census Bureau. 2007. *Census Bureau Announces Most Populous Cities* (Public
17 Information Office Publication No. CB07-91, 28 June 2007). Available at:
18 [http://www.census.gov/Press-Release/www/releases/archives/population/](http://www.census.gov/Press-Release/www/releases/archives/population/010315.html)
19 [010315.html](http://www.census.gov/Press-Release/www/releases/archives/population/010315.html). Accessed: 22 October 2008.
- 20 U.S. Department of Agriculture (USDA). 2008. *PLANTS Database.* Available at:
21 <http://plants.usda.gov/>. Accessed: 2 December 2008.
- 22 U.S. Department of Housing and Urban Development (HUD). 1991. *The Noise*
23 *Guidebook* (publication HUD-953-CPD[1]). Prepared by HUD.
- 24 U.S. Environmental Protection Agency (USEPA) 1971. *Noise from Construction*
25 *Equipment and Operations, Building Equipment, and Home Appliances*
26 (publication NTID 300-1). Prepared by the USEPA. December.
- 27 USEPA. 1995. *AP-42, 5th Edition Compilation of Air Pollutant Emission Factors..*
28 January
- 29 USEPA. 2008a. *National Ambient Air Quality Standards.*
- 30 USEPA. 2008b. *The Green Book of Nonattainment Areas.* December 17.
- 31 USEPA. 2008c. *Section 303(d) Fact Sheet for Watershed: Las Vegas Wash.* Available at:
32 [http://iaspub.epa.gov/tmdl_waters10/huc_rept.control?p_huc=15010015&p_huc_des](http://iaspub.epa.gov/tmdl_waters10/huc_rept.control?p_huc=15010015&p_huc_desc=Las%20Vegas%20Wash)
33 [c=Las%20Vegas%20Wash](http://iaspub.epa.gov/tmdl_waters10/huc_rept.control?p_huc=15010015&p_huc_desc=Las%20Vegas%20Wash). Accessed: 19 December 2008.

- 1 U.S. Fish and Wildlife Service (USFWS). 1992. *Biological Opinion for an Amendment*
2 *of Recreation and Public Lands Lease N-43395 for Three Nevada State Facilities.*
3 8 July.
- 4 USFWS. 1994. *Endangered and Threatened Wildlife and Plants: Determination of*
5 *Critical Habitat for the Mojave Population of the Desert Tortoise.* Federal
6 Register 59:26 (8 February 1994), p. 5820. Available at:
7 http://ecos.fws.gov/docs/federal_register/fr2519.pdf. Accessed: 2 December
8 2008.
- 9 USFWS. 2003. *Status Assessment and Conservation Plan for the Western Burrowing*
10 *Owl in the United States* (Biological Technical Publication BTP-R6001-2003).
11 Available at: <http://library.fws.gov/BTP/westernburrowingowl03.pdf>. Accessed:
12 2 December 2008.
- 13 USFWS. 2008a. *National Wetlands Inventory – Wetlands Online Mapper.* Available at:
14 <http://www.fws.gov/wetlands/Data/mapper.html>. Accessed: 19 December 2008.
- 15 USFWS. 2008b. *Nevada’s Protected Species by County.* Available at:
16 http://www.fws.gov/nevada/protected%5Fspecies/nevada_species_list.html.
17 Accessed: 2 December 2008.
- 18 U.S. Geological Survey (USGS). 1984. *State of Nevada Topographical Map* (revised
19 1984). Prepared by USGS.
- 20 USGS. 1996. *Environmental and Hydrologic Settings of the Las Vegas Valley Area and*
21 *the Carson and Truckee River Basins, Nevada and California* (USGS Water
22 Resources Investigations, Report 96-4087). Prepared by USGS.
- 23 USGS. 2008. *USGS Activities in Nevada Water-Quality Monitoring at Lake Mead:*
24 *Background Information.* Available at: [http://nevada.usgs.gov/lmqw/](http://nevada.usgs.gov/lmqw/backgroundinfo.htm)
25 [backgroundinfo.htm](http://nevada.usgs.gov/lmqw/backgroundinfo.htm). Accessed: 8 December 2008.
- 26 U.S. Natural Resource Conservation Service (NRCS). 2007a. *NRCS – Web Soil Survey –*
27 *Las Vegas Valley Area, Nevada.* Available at:
28 <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed: 4
29 November 2008.
- 30 USNRCS. 2007b. *NRCS – Soil Data Mart – Generate Data – Las Vegas Valley Area,*
31 *Nevada – Engineering Properties.* Available at: [http://soildatamart.nrcs.usda.gov/](http://soildatamart.nrcs.usda.gov/Report.aspx?Survey=NV788&UseState=NV)
32 [Report.aspx?Survey=NV788&UseState=NV](http://soildatamart.nrcs.usda.gov/Report.aspx?Survey=NV788&UseState=NV). Accessed: 4 November 2008.
- 33 Zikmund. 1996. Zikmund, Kim. *Extent and Potential Use of the Shallow Aquifer and*
34 *Wash Flow in Las Vegas Valley, Nevada.* Technical Paper. SNWA, Las Vegas,
35 Nevada. Available at: http://www.lasvegasmmp.org/html/pubs_tech_papers.html.
36 Accessed: 5 December 2008.

SECTION 8
LIST OF PREPARERS

Project Management

Doug McFarling, *Program Manager*
B.S. Environmental Studies

Marcie Martin, *Project Manager*
M.S. Environmental Management/Industrial Hygiene

Andrew Chen, *Assistant Project Manager*
B.A. Environmental Studies

Quality Assurance

Michael Henry, *Environmental Planner*
PhD Ecology, Evolution, and Marine Biology

Project Staff

Ben Botkin, *Environmental Analyst*
B.S. Environmental Studies

Katie London, *Environmental Scientist*
M.S. Ocean Science

Theresa Price, *Environmental Scientist*
M.S. Applied Biological Sciences

Scott Sjulín, *Environmental Analyst*
B.S. Urban Design and Development

Shellie Sullo, *Cultural Resources Manager*
B.A. Anthropology

Production

Janice Depew, *Production*

Deirdre Stites, *Graphics*

SECTION 9
AGENCIES AND INDIVIDUALS CONSULTED

9.1 FEDERAL AND STATE AGENCIES

Nevada State Clearinghouse

Ronald James, Nevada State Historic Preservation Office

Tina Regan, Nevada Division of Environmental Protection

Karen Vitulano, U.S. EPA – Environmental Review Office

Robert Williams, U.S. Fish and Wildlife Service

U.S. Army Corps of Engineers – Environmental Planning Division

9.2 LOCAL AGENCIES AND INDIVIDUALS

Dennis Cederburg, Clark County Public Works Department

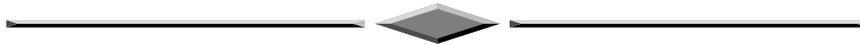
Frank Fiori, City of North Las Vegas Planning and Zoning Department

Qiong Liu, City of North Las Vegas Public Works Department

9.3 FEDERALLY-RECOGNIZED TRIBES

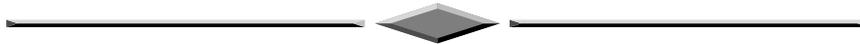
Alfreda Mitre, Las Vegas Paiute Tribe

Kenny Anderson, Las Vegas Paiute Tribe



APPENDIX A

AGENCY CONSULTATION



NEVADA NATURAL HERITAGE PROGRAM DATA REQUEST FORM

rev. WXP-2007-06

Use this form to query the Nevada Natural Heritage Program database for location information of at-risk species. Please fill out this form as completely and specifically as possible, attaching additional sheets as needed. For more information on available species and data fields, fees, limitations, and restrictions, please visit our web site <<http://heritage.nv.gov>> or contact us for printed information. We cannot guarantee our response time; normal time is about two weeks, and we will strive to (and usually can) meet more urgent deadlines.

Date signed: 26 February 2009 Date needed: 19 March 2009

Organization: AMEC Earth & Environmental, Inc.

Mailing Address: 1405 West Auto Drive, Tempe, AZ 85284-1016

Phone: (480) 940-2320 FAX: (480) 785-0970 email: Theresa.price@amec.com

Project or Site Name: NVARNG Proposed RTC at Floyd Edsall Training Center (FETC)

How will the information be used? NEPA process (EA)

KIND OF SEARCH

(see current fee schedule <<http://heritage.nv.gov/fees.htm>> for descriptions, costs, and examples)

Standard (one-time), OR... Annual Subscription: first year continuation

LIMIT SEARCH BY THE FOLLOWING CRITERIA

(check or complete all that apply to ensure you purchase only the records you want)

Location (please specify by township-range-section, map quadrangle, watershed, or other boundaries, and attach map(s) when possible;

for GIS requests, submit polygon(s) of area(s) in UTM Zone-11 meter coordinates, NAD27 datum, as ArcView® shapefiles if possible):

6400 Range Road, Las Vegas, Nevada in Township 19 South, Range 62 East, Sections 15, 21, and 22, Mount Diablo Baseline and Meridian; Clark County, Nevada.

*Single report not separated by area.

Species: all plants all animals all vertebrates all invertebrates

other (specify groups/taxa):

Status: all at-risk all federal T/E/candidate all state T/E all watch-list

Additional Limiting Criteria (please specify; see data catalog <<http://heritage.nv.gov/datafids.htm>> for searchable fields):

FORMAT AND CONTENT OF SEARCH RESULTS

(see fee schedule <<http://heritage.nv.gov/fees.htm>> and data catalog <.../datafids.htm> for format descriptions and available fields)

Standard Summary Records (name, status, location, precision, date), specify: printed ASCII text file

OR Complete or Customized (enter desired fields below) Records, specify: printed ASCII text file

OR ArcView® GIS shapefiles (complete records only), specify:

projection (none=UTM Zone-11 meters): _____ datum (blank=NAD27): _____

Custom Fields (enter names or types of ALL data fields to include for custom records):

HOW YOU WANT THE RESULTS SENT

Please Send: search results immediately cost estimate first exact cost first

Send by any of the following checked methods: U.S. Mail FAX email FedEx

For FedEx, include PHYSICAL address above, and specify account to charge:

BY SIGNING BELOW, I acknowledge that I have read and agreed to abide by the Nevada Natural Heritage Program's (NNHP's) current fee schedule <<http://heritage.nv.gov/fees.htm>> and its data limitations and restrictions <.../limitats.htm> (contact us for printed copies). I also agree that (1) all data supplied, and the analytic tools and processes from which they are derived, are the privileged, confidential property of NNHP, and/or The Nature Conservancy, Inc., and/or those who supplied the data to NNHP, and will not be provided to any other party without our consent; (2) in any use of the data, NNHP will be cited as a source, along with the year and month it supplied the data; and (3) while NNHP strives for accuracy and completeness, the data it supplies depend on the observations and research of many individuals and organizations, new data are constantly received, and in no case will the data be represented as a complete survey of any species or area.

Theresa Price

Signature

Theresa Price

Name (please print)

Botanist

Title

Please MAIL or FAX completed and signed form to: Nevada Natural Heritage Program, attn: Data Manager, 901 S Stewart St, suite 5002, Carson City NV 89701-5245. FAX (775) 684-2909, phone (775) 684-2905.

ALLEN BIAGGI
Director

Department of Conservation
and Natural Resources

JENNIFER E. NEWMARK
Administrator

JIM GIBBONS
Governor



Nevada Natural Heritage Program
Richard H. Bryan Building
901 S. Stewart Street, suite 5002
Carson City, Nevada 89701-5245
U.S.A.

tel: (775) 684-2900
fax: (775) 684-2909



STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program
<http://heritage.nv.gov>

03 March 2009

MAR 09 2009

Theresa Price
AMEC Earth & Environment, Inc.
1405 West Auto Drive
Tempe, AZ 85284-1016

RE: Data request received 26 February 2009

Dear Ms. Price:

We are pleased to provide the information you requested on endangered, threatened, candidate, and/or At Risk plant and animal taxa recorded within or near the NVARNG Proposed RTC at Floyd Edsall Training Center Project area. We searched our database and maps for the following, a three kilometer radius around:

Township 19S Range 62E Sections 15, 21 and 22

The enclosed printout lists the taxa recorded within the given area. Please be aware that habitat may also be available for, the Las Vegas bearpoppy, *Arctomecon californica*, a Nevada Bureau of Land Management Special Status Species. We do not have complete data on various raptors that may also occur in the area; for more information contact Ralph Phenix, Nevada Division of Wildlife at (775) 688-1565. Note that all cacti, yuccas, and Christmas trees are protected by Nevada state law (NRS 527.060-.120), including taxa not tracked by this office.

Please note that our data are dependent on the research and observations of many individuals and organizations, and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the taxa or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for checking with our program. Please contact us for additional information or further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric S. Miskow".

Eric S. Miskow
Biologist /Data Manager

At Risk Taxa Recorded Near the NVARNG Proposed RTC Training Center Project Area

Compiled by the Nevada Natural Heritage Program for AMEC Earth & Environment, Inc.

02 March 2009

| <u>Scientific name</u> | <u>Common name</u> | <u>Usfws</u> | <u>Blm</u> | <u>Usfs</u> | <u>State</u> | <u>Srank</u> | <u>Grank</u> | <u>Lat</u> | <u>Long</u> | <u>Prec</u> | <u>Last observed</u> |
|---------------------------|--------------------------------------|--------------|------------|-------------|--------------|--------------|--------------|------------|-------------|-------------|----------------------|
| Plants | | | | | | | | | | | |
| <i>Perilyte intricata</i> | desert rockdaisy | | | | | S3 | G3 | 362122N | 1150640W | G | 1976-10-30 |
| Reptiles | | | | | | | | | | | |
| <i>Gopherus agassizii</i> | desert tortoise (Mojave Desert pop.) | LT, SAT | S | T | YES | S2S3 | G4 | 361735N | 1150340W | S | 1987-PRE |
| <i>Gopherus agassizii</i> | desert tortoise (Mojave Desert pop.) | LT, SAT | S | T | YES | S2S3 | G4 | 361805N | 1150213W | S | 1991-POST |

U. S. Fish and Wildlife Service (Usfws) Categories for Listing under the Endangered Species Act:

- LT Listed Threatened - likely to be classified as Endangered in the foreseeable future if present trends continue
- SA Similarity of appearance species

Bureau of Land Management (Blm) Species Classification:

- S Nevada Special Status Species - USFWS listed, proposed or candidate for listing, or protected by Nevada state law

United States Forest Service (Usfs) Species Classification:

- T Region 4 and/or Region 5 Threatened species

Nevada State Protected (State) Species Classification:

- Fauna: YES Species protected under NRS 501.

Precision (Prec) of Mapped Occurrence:

Precision, or radius of uncertainty around latitude/longitude coordinates:

- S Seconds: within a three-second radius
- M Minutes: within a one-minute radius, approximately 2 km or 1.5 miles
- G General: within about 8 km or 5 miles, or to map quadrangle or place name

Nevada Natural Heritage Program Global (Grank) and State (Srank) Ranks for Threats and/or Vulnerability:

- G Global rank indicator, based on worldwide distribution at the species level
- T Global trinomial rank indicator, based on worldwide distribution at the infraspecific level
- S State rank indicator, based on distribution within Nevada at the lowest taxonomic level
- 1 Critically imperiled and especially vulnerable to extinction or extirpation due to extreme rarity, imminent threats, or other factors
- 2 Imperiled due to rarity or other demonstrable factors
- 3 Vulnerable to decline because rare and local throughout its range, or with very restricted range
- 4 Long-term concern, though now apparently secure; usually rare in parts of its range, especially at its periphery
- 5 Demonstrably secure, widespread, and abundant
- A Accidental within Nevada
- B Breeding status within Nevada (excludes resident taxa)
- H Historical; could be rediscovered
- N Non-breeding status within Nevada (excludes resident taxa)
- Q Taxonomic status uncertain
- U Unrankable
- Z Enduring occurrences cannot be defined (usually given to migrant or accidental birds)
- ? Assigned rank uncertain



STATE OF NEVADA OFFICE OF THE MILITARY

Office of the Adjutant General
2460 Fairview Drive
Carson City, Nevada 89701-6807



JIM GIBBONS
Governor

WILLIAM R. BURKS
Brigadier General
The Adjutant General

February 25, 2009

Janet Bair
U.S. Fish and Wildlife Service
Southern Nevada Field Office
4701 N. Torrey Pines Dr.
Las Vegas, NV 89130

Dear Ms. Bair,

The Nevada Army National Guard (NVARNG) is proposing construction of a Readiness Center and a solar photovoltaic system (SPVS) at the Floyd Edsall Training Center (FETC) in North Las Vegas, NV. The NVARNG requests information on federally listed threatened, endangered, or candidate species, or critical habitat within the vicinity of this project.

The FETC is located at 6400 Range Road, Las Vegas, Nevada in Township 19 South, Range 62 East, Sections 15, 21, and 22, Mount Diablo Baseline and Meridian, Clark County, Nevada. The FETC is comprised of 1,648.2 acres. The natural setting of FETC and the proposed project site are predominantly Mojave Desert scrub, and several unnamed ephemeral drainages occur within project area. Enclosed for your review are a site map, layout drawings, and photos.

The proposed construction area totals 326,597 square feet (sf). The proposed Readiness Center would consist of a 65,347-sf facility, housing administrative offices, classrooms, lockers, latrines, kitchen space, storage areas, and work bays. The 300-acre SPVS will be located northwest of the proposed Readiness Center. The perimeters of each component would be fenced in by chain link fence or similar type fencing.

Please review the enclosed material and provide information on federally listed threatened, endangered, or candidate species, or critical habitat within the project area. Please direct responses to the following address:

Theresa Price
AMEC Earth & Environmental
1405 West Auto Drive
Tempe, AZ 85284-1016

If you have any questions or require additional information, please contact Forrest Fox or via e-mail at forrest.fox@us.army.mil.

Sincerely,

Clayton W. Chappell
MAJ, SC, NVARNG
Construction & Facilities
Management Officer

Enclosures



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Nevada Fish and Wildlife Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
Ph: (702) 515-5230 ~ Fax: (702) 515-5231

March 20, 2009
File No. 84320-2009-SL-0197

Ms. Theresa Price
AMEC Earth & Environmental
1405 West Auto Drive
Tempe, Arizona 85284-1016

Dear Ms. Price:

Subject: Request for Information Regarding Federally Listed Threatened, Endangered, or Candidate Species, or Critical Habitat Within the Proposed Project Area for the Construction of a Readiness Center and Solar Photovoltaic System at the Floyd Edsall Training Center.

In response to your letter received on March 2, 2009, the following federally listed species may occur in the subject project area:

- Desert tortoise (*Gopherus agassizii*) (Mojave population), threatened

There is no designated critical habitat for the desert tortoise near the proposed project. This response fulfills the requirement of the Fish and Wildlife Service (Service) to provide information on federally listed species pursuant to section 7(c) of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et seq.), for projects that are authorized, funded, or carried out by a Federal agency.

The Nevada Fish and Wildlife Office no longer provides species of concern lists. Most of these species for which we have concern, are also on the sensitive species list for Nevada maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we have adopted Heritage's sensitive species list and partnered with them to provide distribution data and information on the conservation needs for sensitive species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or those that are in serious decline. Consideration of these sensitive species and exploring management alternatives early in the planning process can provide long-term conservation benefits and avoid future conflicts.

For a list of sensitive species by county, visit Heritage's website at www.heritage.nv.gov. For a specific list of sensitive species that may occur in the project area, you can obtain a data request form from the website or by contacting Heritage at 901 South Stewart Street, Suite 5245, Carson City, NV 89701, 775-684-2900. Please indicate on the form that your request is being obtained as part of your



coordination with the Service under the Endangered Species Act. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address. Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (see <http://www.leg.state.nv.us/NAC/NAC-503.html>). Before a person can hunt, take, or possess any parts of wildlife species classified as protected, they must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (<http://www.ndow.org>; (702) 486-5127).

We are concerned that the project may impact the Gila monster (*Heloderma suspectum cinctum*), a species listed as sensitive under the Heritage Program and as a protected species under Nevada State law. The banded Gila monster resides primarily in the Mojave desert scrub and salt desert scrub ecosystems in southern Nevada, southeastern California, southwestern Utah, and western Arizona. The Gila monster is one of only two venomous lizard species in the world. Gila monsters are difficult to locate as they spend the majority of the year in underground burrows; however, illegal collection, construction of roads, and loss of habitat continue to threaten this sensitive. Given that the Gila monster may occur within the project area, we encourage you to minimize project impacts to any existing populations and suitable habitat for this species.

Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 et. seq.), we are concerned about potential impacts the proposed project may have on migratory birds in the area. Under the MBTA, nests (nests with eggs or young) of migratory birds may not be harmed, nor may migratory birds be killed. Given these concerns, we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be conducted outside the avian breeding season to avoid potential destruction of bird nests or young, or birds that breed in the area. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Please reference File No. 84320-2009-SL-0197 in future correspondence concerning this species list. If you have questions regarding this correspondence or require additional information, please contact Corey Kallstrom in the Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230.

Sincerely,



 Robert D. Williams
State Supervisor



STATE OF NEVADA OFFICE OF THE MILITARY

Office of the Adjutant General
2460 Fairview Drive
Carson City, Nevada 89701-6807



JIM GIBBONS
Governor

WILLIAM R. BURKS
Brigadier General
The Adjutant General

February 25, 2009

Patricia McQueary
St. George Regulatory Office
U.S. Army Corps of Engineers
321 North Mall Drive, Suite L-101
St George, UT 84790- 7314

Dear Ms. McQueary,

The Nevada Army National Guard (NVARNG) is proposing construction of a Readiness Center and a solar photovoltaic system (SPVS) at the Floyd Edsall Training Center (FETC) in North Las Vegas, NV. The NVARNG requests information on jurisdictional waters of the U.S. that may be present within the vicinity of the project area.

The FETC is located at 6400 Range Road, Las Vegas, Nevada in Township 19 South, Range 62 East, Sections 15, 21, and 22, Mount Diablo Baseline and Meridian, Clark County, Nevada. The FETC is comprised of 1,648.2 acres. The natural setting of FETC and the proposed project site are predominantly Mojave Desert scrub, and several unnamed ephemeral drainages occur within project area. Enclosed for your review are a site map, layout drawings, and photos.

The proposed construction area totals 326,597 square feet (sf). The proposed Readiness Center would consist of a 65,347-sf facility, housing administrative offices, classrooms, lockers, latrines, kitchen space, storage areas, and work bays. The 300-acre SPVS will be located northwest of the proposed Readiness Center. The perimeters of each component would be fenced in by chain link fence or similar type fencing.

Please review the enclosed material and provide information on the presence of jurisdictional waters of the U.S. within the project area. Please direct responses to the following address:

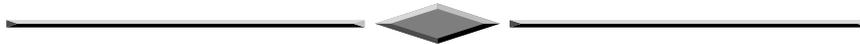
Theresa Price
AMEC Earth & Environmental
1405 West Auto Drive
Tempe, AZ 85284-1016

If you have any questions or require additional information, please contact Forrest Fox at (775) 887-7291 or via e-mail at forrest.fox@us.army.mil.

Sincerely,

Clayton W. Chappell
MAJ, SC, NVARNG
Construction & Facilities
Management Officer

Enclosures



APPENDIX B

AIR QUALITY CALCULATIONS



APPENDIX B
AIR QUALITY CALCULATIONS

Combustion Emissions Associated with Construction of the Readiness Center

Table B-1. Construction Emission Factors

| Equipment | Days per Year | Hours of Operation per Year | Emission Factors (lb/hr) | | | | |
|------------------------|---------------|-----------------------------|--------------------------|-----------------|------------------|-----------------|-------|
| | | | CO | NO _x | PM ₁₀ | SO _x | VOC |
| Scraper | 240 | 2,400 | 1.25 | 3.84 | 0.41 | 0.46 | 0.27 |
| Bulldozer | 240 | 2,400 | 1.209 | 3.037 | 0.123 | 0.453 | 0.232 |
| Excavator | 240 | 2,400 | 0.968 | 2.112 | 0.088 | 0.176 | 0.088 |
| Heavy-haul transporter | 240 | 2,400 | 1.8 | 4.17 | 0.26 | 0.45 | 0.19 |
| Commuting * | - | - | 16.580 | 1.640 | 0.078 | 0.005 | 2.470 |

* Emission factor in grams per mile (g/mi)

Source: Emission Factors: USAF 2003, CA ANG 2008.

Assumptions: Commuters: commuting distance = average of 12 miles per roundtrip (mi/RT), 5 days/week, 48 weeks/year, each commuter drives on their own, 20 commuters for construction work. Emissions factors for commuting are from Privately Owned Vehicles (POV) from Calendar Year 1995, at an altitude less than or equal to 4,000 feet.

$$\# \text{ miles/year} = (\# \text{ miles/RT}) \times (\text{RT/wk}) \times (\text{wk/yr}).$$

24 month construction period, 5 work days per week, 10 hours per work day, 2,600 hours of operation per year. Equipment emissions were calculated as follows: Emissions (lb/day) = (lb of pollutant emitted per hour) x (hours per day for each type of equipment operated).

Emissions Associated with Construction and Ground Disturbance of the SPVS

Extrapolated from SPVS at Nellis AFB for a 300 acre SPVS, fugitive dust and combustion emissions from the SPVS would be 0.48 tons per year of PM₁₀ (USAF 2006).

1 Fugitive Dust Emissions Associated with Ground Disturbance During
 2 Construction of Readiness Center and Associated Infrastructure

3 Fugitive dust emissions were calculated as follows: PM_{10} (lb/day) = (220 lb
 4 PM_{10} /acre-month) x (month/22days) x (acres graded per day). Regular watering
 5 of exposed surfaces results in a 75% PM_{10} emission reduction (USAF 2006).

6 Total building construction would include 71,897 sf (65,347 sf facility plus
 7 additional components), or 1.65 acres. Total infrastructure improvements would
 8 include 256,828 sf or 5.89 acres. It is assumed that both these areas would be
 9 continually disturbed over the 24 month construction period.

10 Combustion Emissions Associated with Operation of the Readiness Center

11 **Table B-2. Operational Emission Factors**

| Equipment | Capacity (btu/hr) | Conversion Factor (btu/cf gas) | Hourly Usage (cf gas/hr) | Annual Usage (cf gas/yr) | Emission Factors (lb/10 ⁶ cf gas) | | | | |
|-----------|----------------------|--------------------------------------|--------------------------------|--------------------------------|--|-----------------|------------------|-----------------|-----|
| | | | | | CO | NO _x | PM ₁₀ | SO _x | VOC |
| Boiler | 1,000,000 | 1,020 | 980 | 8,584,800 | 84.0 | 50.0 | 7.6 | 0.6 | 5.5 |

12 *Source:* Emission Factors: USEPA 1995.

13 Assumptions: Boilers- Worst-case scenario involving use of 5 boilers in operation
 14 24 hours/day, 365 days/yr to provide heating and hot water to proposed
 15 Readiness Center.

16 Assumptions: Commuters- commuting distance = average of 12 miles per
 17 roundtrip (mi/RT), 5 days/week, 48 weeks/year, each commuter drives on their
 18 own, 6 full-time regular commuters. Emissions factors for commuting are from
 19 Privately Owned Vehicles (POV) from Calendar Year 1995, at an altitude less
 20 than or equal to 4,000 feet.

Combustion Emissions Associated with Construction and Demolition Activities

| Equipment | Hours/Day | Days/Week | Week/Year | Emission Factors (lb/hr) | | | | |
|------------------------|-----------|-----------|-----------|--------------------------|-----------------|------------------|-----------------|-------|
| | | | | CO | NO _x | PM ₁₀ | SO _x | VOC |
| scraper | 10 | 5 | 48 | 1.25 | 3.84 | 0.41 | 0.46 | 0.27 |
| dozer | 10 | 5 | 48 | 1.209 | 3.037 | 0.123 | 0.453 | 0.232 |
| excavator | 10 | 5 | 48 | 0.968 | 2.112 | 0.088 | 0.176 | 0.088 |
| heavy-haul transporter | 10 | 5 | 48 | 1.8 | 4.17 | 0.26 | 0.45 | 0.19 |

| | Commuting Distance (mi) | Weekly Schedule (days/week) | Annual Schedule (weeks/yr) | Commuters | Miles/Year | Emission Factors (g/mi) | | | | | Emissions tons/year | | | | |
|-----------|-------------------------|-----------------------------|----------------------------|-----------|------------|-------------------------|-----------------|------------------|-----------------|------|---------------------|-----------------|------------------|-----------------|----------|
| | | | | | | CO | NO _x | PM ₁₀ | SO _x | ROG | CO | NO _x | PM ₁₀ | SO _x | ROG |
| commuters | 12 | 5 | 48 | 20 | 57600 | 16.58 | 1.64 | 0.078 | 0.005 | 2.47 | 1.042585 | 0.103127 | 0.004905 | 0.000314 | 0.155319 |

| Equipment | Emissions (tons/year) | | | | |
|---|-----------------------|-----------------|------------------|-----------------|-----------|
| | CO | NO _x | PM ₁₀ | SO _x | VOC |
| scraper | 1.50 | 4.61 | 0.49 | 0.55 | 0.32 |
| dozer | 1.45 | 3.64 | 0.15 | 0.54 | 0.28 |
| excavator | 1.16 | 2.53 | 0.11 | 0.21 | 0.11 |
| commuters | 1.04 | 0.10 | 0.00 | 0.00 | 0.16 |
| ground disturbance | - | - | 1.98 | - | - |
| heavy-haul transporter | 2.16 | 5.00 | 0.31 | 0.54 | 0.23 |
| Total | 7.31 | 15.89 | 3.04 | 1.85 | 1.09 |
| <i>de minimis threshold</i> | 100 | 100 | 70 | N/A | 100 |
| General Conformity Determination Required | No | No | No | N/A | No |

*EMFAC2007 emission factors, fleet average was used as individual horsepower on equipment was not specified

Ground Disturbance sf

- 65374 Readiness Center
- 6000 Metal Storage Bldg
- 300 Controlled waste handling
- 250 Guard Shack
- 45000 New Access Rd
- 36000 Sidewalk
- 99225 POV parking
- 74475 Military Parking

326624 sf
 7.49825528 acres

 220 lb-PM10/acre-month
 12 month
 0.2 BMPs
 1.979539394 PM10 tons/year

Combustion Emissions Associated with Operation of Proposed Facilities

| Equipment | BTU/hr | BTU/ cf gas | cf gas/hr | Emission Factors (lb/10 ⁶ cf gas) | | | | |
|-----------|---------|-------------|-----------|--|-----------------|------------------|-----------------|------|
| | | | | CO | NO _x | PM ₁₀ | SO _x | VOC |
| boiler | 1000000 | 1020 | 980 | 84.00 | 50.00 | 7.60 | 0.60 | 5.50 |

| | Commuting Distance (mi) | Weekly Schedule (days/week) | Annual Schedule (weeks/yr) | Commuters | Miles/Year | Emission Factors (g/mi) | | | | | Emissions tons/year | | | | |
|-----------|-------------------------|-----------------------------|----------------------------|-----------|------------|-------------------------|-----------------|------------------|-----------------|------|---------------------|-----------------|------------------|-----------------|----------|
| | | | | | | CO | NO _x | PM ₁₀ | SO _x | ROG | CO | NO _x | PM ₁₀ | SO _x | ROG |
| commuters | 12 | 5 | 48 | 6 | 17280 | 16.58 | 1.64 | 0.078 | 0.005 | 2.47 | 0.312776 | 0.030938 | 0.001471 | 9.43E-05 | 0.046596 |

| Equipment | Emissions (tons/year) | | | | |
|---|-----------------------|-----------------|------------------|-----------------|-----------|
| | CO | NO _x | PM ₁₀ | SO _x | VOC |
| boilers* | 1.803 | 1.073 | 0.163 | 0.013 | 0.118 |
| commuters | 0.313 | 0.031 | 0.001 | 0.000 | 0.047 |
| Total | 2.12 | 1.10 | 0.16 | 0.01 | 0.16 |
| <i>de minimis threshold</i> | 100 | 100 | 70 | N/A | 100 |
| General Conformity Determination Required | No | No | No | N/A | No |

*Total for boilers assumes worst-case scenario involving use of 5 boilers in operation 24 hours/day, 365 days/yr
 Emission factors from USEPA AP-42 Emission Factors List- all PM assumed to be <1 micron, sulfur content of gas assumed to be 2,000 grains/10⁶ SCF

